Installation and service instructions

for contractors

Vitodens 200-W
Type B2HA, 45 and 60 kW
Wall mounted gas condensing boiler
Natural gas and LPG version

For applicability, see the last page

VITODENS 200-W

Please keep safe.

Safety instructions

⚠ Please follow these safety instructions closely to prevent accidents and material losses.

Safety instructions explained

⚠ **Danger**
This symbol warns against the risk of injury.

❗ **Please note**
This symbol warns against the risk of material losses and environmental pollution.

Note
Details identified by the word "Note" contain additional information.

Target group

These instructions are exclusively intended for qualified contractors.
■ Work on gas installations must only be carried out by a registered gas fitter.
■ Work on electrical equipment must only be carried out by a qualified electrician.
■ The system must be commissioned by the system installer or a qualified person authorised by the installer.

Regulations

Observe the following when working on this system:
■ Statutory regulations regarding the prevention of accidents
■ Statutory regulations regarding environmental protection

■ The Code of Practice of relevant trade associations
■ All current safety regulations as defined by DIN, EN, DVGW, TRGI, TRF, VDE and all locally applicable standards
  Ⓐ ÖNORM, EN, ÖVGW-TR Gas, ÖVGW-TRF and ÖVE
  ⒸⒽ SEV, SUVA, SVGW, SVTI, SWKI, VKF and EKAS guideline 1942: LPG, part 2

If you smell gas

⚠ **Danger**
Escaping gas can lead to explosions which may result in serious injury.
  ■ Do not smoke. Prevent naked flames and sparks. Do not switch lights or electrical appliances on or off.
  ■ Close the gas shut-off valve.
  ■ Open windows and doors.
  ■ Evacuate any people from the danger zone.
  ■ Notify your gas or electricity supplier and your local heating contractor from outside the building.
  ■ Shut off the electricity supply to the building from a safe place (outside the building).

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Safety instructions (cont.)

If you smell flue gas

⚠ **Danger**
Flue gas can lead to life threatening poisoning.
- Shut down the heating system.
- Ventilate the installation site.
- Close all doors in the living space.

Flue systems and combustion air

Ensure that flue systems are clear and cannot be sealed, for instance due to accumulation of condensate or other causes. Ensure a sufficient supply of combustion air.
Instruct system users that subsequent modifications to the building characteristics are not permissible (e.g. cable/pipework routing, cladding or partitions).

⚠ **Danger**
Leaking or blocked flue systems, or an insufficient supply of combustion air can cause life threatening poisoning from carbon monoxide in the flue gas.
Ensure the flue system is in proper working order. Apertures for supplying combustion air must be non-closable.

Extractors

Operating appliances that extract air to the outside (cooker hoods, extractors, air conditioning units, etc.) can create negative pressure. If the boiler is operated at the same time, this can lead to reverse flow of the flue gas.

⚠ **Danger**
The simultaneous operation of the boiler and appliances that extract air to the outside can result in life threatening poisoning due to reverse flow of the flue gas.
Fit an interlock circuit or take suitable steps to ensure a sufficient supply of combustion air.

Working on the system

- Where gas is used as the fuel, close the main gas shut-off valve and safeguard it against unintentional reopening.
- Isolate the system from the power supply (e.g. by removing the separate fuse or by means of a mains isolator) and check that it is no longer 'live'.
- Safeguard the system against reconnection.

⚠ **Danger**
Hot surfaces can cause burns.
- Before maintenance or service work, switch OFF the appliance and let it cool down.
- Never touch hot surfaces on the boiler, burner, flue system or pipework.

! **Please note**
Electronic assemblies can be damaged by electrostatic discharge.
Before beginning work, touch earthed objects, such as heating or water pipes, to discharge static loads.

Safety instructions (cont.)

Repair work

! **Please note**
Repairing components that fulfil a safety function can compromise the safe operation of the system.
Faulty components must be replaced with original Viessmann spare parts.

Auxiliary components, spare and wearing parts

! **Please note**
Spare and wearing parts that have not been tested together with the system can compromise its function. Installing non-authorised components and making non-approved modifications or conversions can compromise safety and may invalidate the warranty.
For replacements, use only original spare parts supplied or approved by Viessmann.

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Index

Index (cont.)

Intended use

The appliance is only intended to be installed and operated in sealed unvented heating systems that comply with EN 12828, with due attention paid to the associated installation, service and operating instructions. It is only designed for the heating of water that is of potable water quality.

Intended usage presupposes that a fixed installation in conjunction with permissible, system-specific components has been carried out.

Commercial or industrial usage for a purpose other than heating the building or DHW does not comply with regulations.

Any usage beyond this must be approved by the manufacturer for the individual case.

Incorrect usage or operation of the appliance (e.g. the appliance being opened by the system user) is prohibited and results in an exclusion of liability. Incorrect usage also occurs if the components in the heating system are modified from their intended function (e.g. if the flue gas and ventilation air paths are sealed).

Product information

Vitodens 200-W, type B2HA

Preset for operation with natural gas E and natural gas LL.
For conversion to LPG P (without conversion kit), see the service instructions.

In principle the **Vitodens 200-W** may only be delivered to countries listed on the type plate. For deliveries to alternative countries, approved contractors must arrange individual approval on their own initiative and in accordance with the law of the country in question.

Multi boiler system
For the installation of a multi boiler system observe the installation instructions for the multi boiler system accessories.

Service

Preparing for installation

> **!** **Please note**
> To prevent appliance damage,

connect all pipework free of load and torque stress.
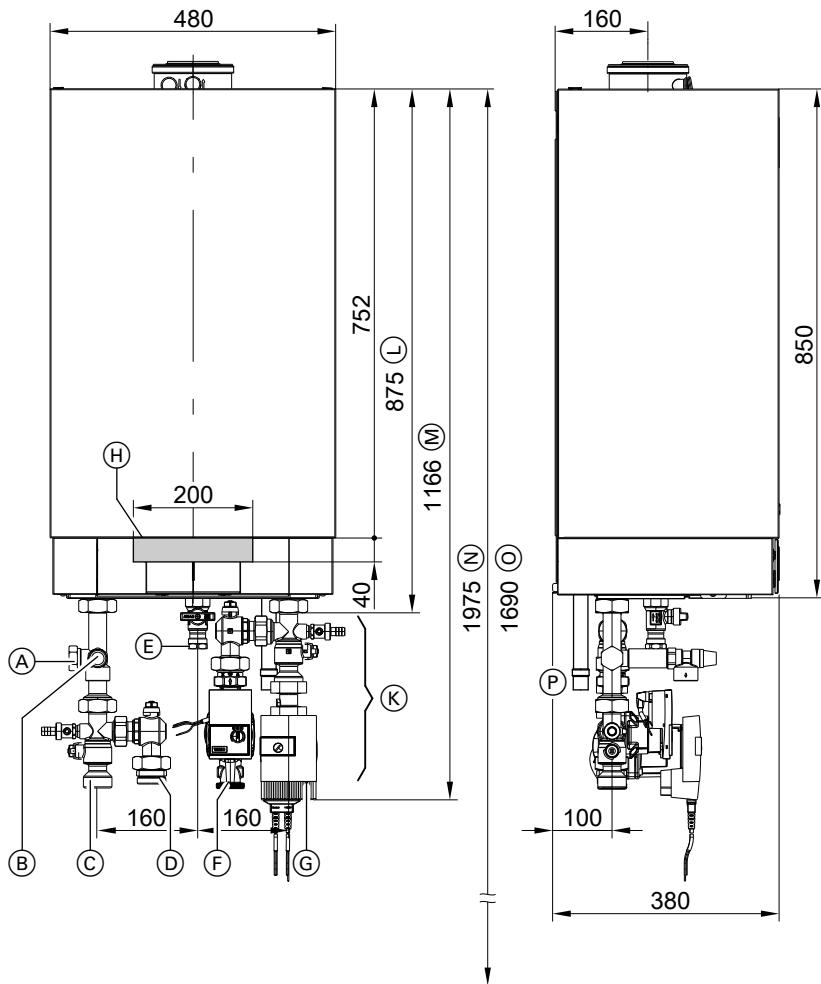
(A) Expansion vessel G1
(B) Safety valve
(C) Heating flow G1½
(D) Cylinder flow G1½
(E) Gas connection R ¾

(F) Cylinder return G1½
(G) Heating return G1½
(H) Cable entry area at the back
(K) Accessories (connection sets)

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Preparing for installation (cont.)

Ⓛ Without connection sets (accesso-
ries)

Ⓜ With connection sets (accessories)

Ⓝ Recommended dimension (single
boiler system)

Ⓞ Recommended dimension (multi
boiler system)

Ⓟ Condensate drain

Note
This boiler (IP rating: IP X4 D) is
approved for installation in wet rooms
inside safety zone 1 in accordance with
DIN VDE 0100, providing the occurrence
of hosed water can be ruled out.
Observe the requirements of
DIN VDE 0100.

1. Prepare the water connections. Thor-
oughly flush the heating system.

2. Prepare the gas connection accord-
ing to TRGI or TRF [or local regula-
tions].

3. Prepare the electrical connections.
   - Power cable: NYM-J 3 x 1.5 mm^2,
     max. fuse rating 16 A, 230 V~.
   - Accessory cables: NYM with the
     required number of cores for exter-
     nal connections.
   - Allow all cables in area "Ⓗ" to pro-
     trude 1200 mm from the wall.

Installation

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Mounting the boiler and making connections

Fitting the wall mounting bracket

Note
The enclosed screws and rawl plugs are only suitable for concrete. For other construction materials, use fixing materials that are suitable for 100 kg loads.
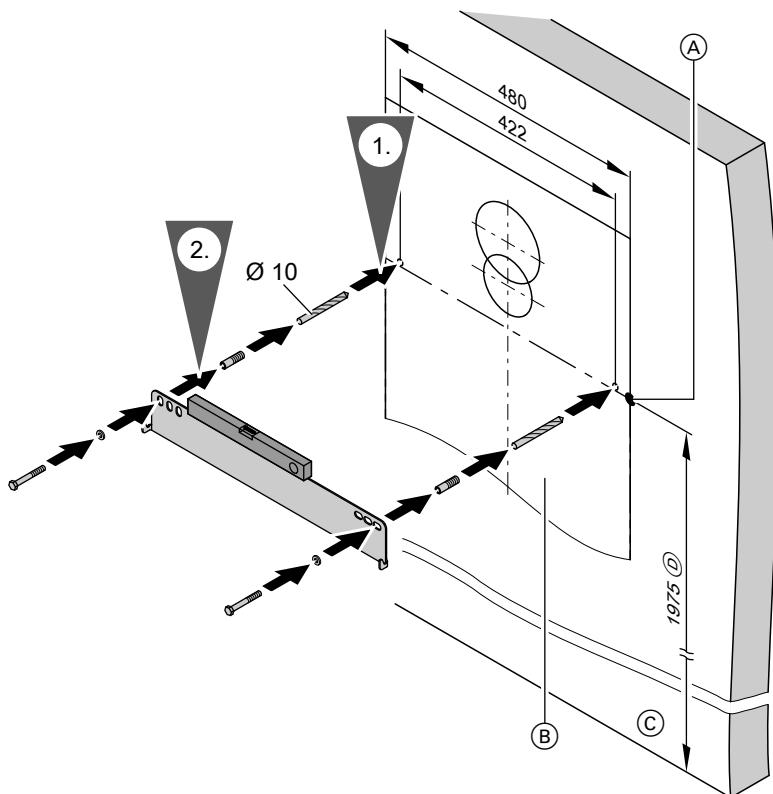
Ⓐ Reference point: boiler top edge
Ⓑ Installation template (included with the boiler)
Ⓒ Top edge finished floor
Ⓓ Recommendation

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Mounting the boiler and making connections (cont.)

Hooking the boiler onto the wall mounting bracket and levelling it

Installation
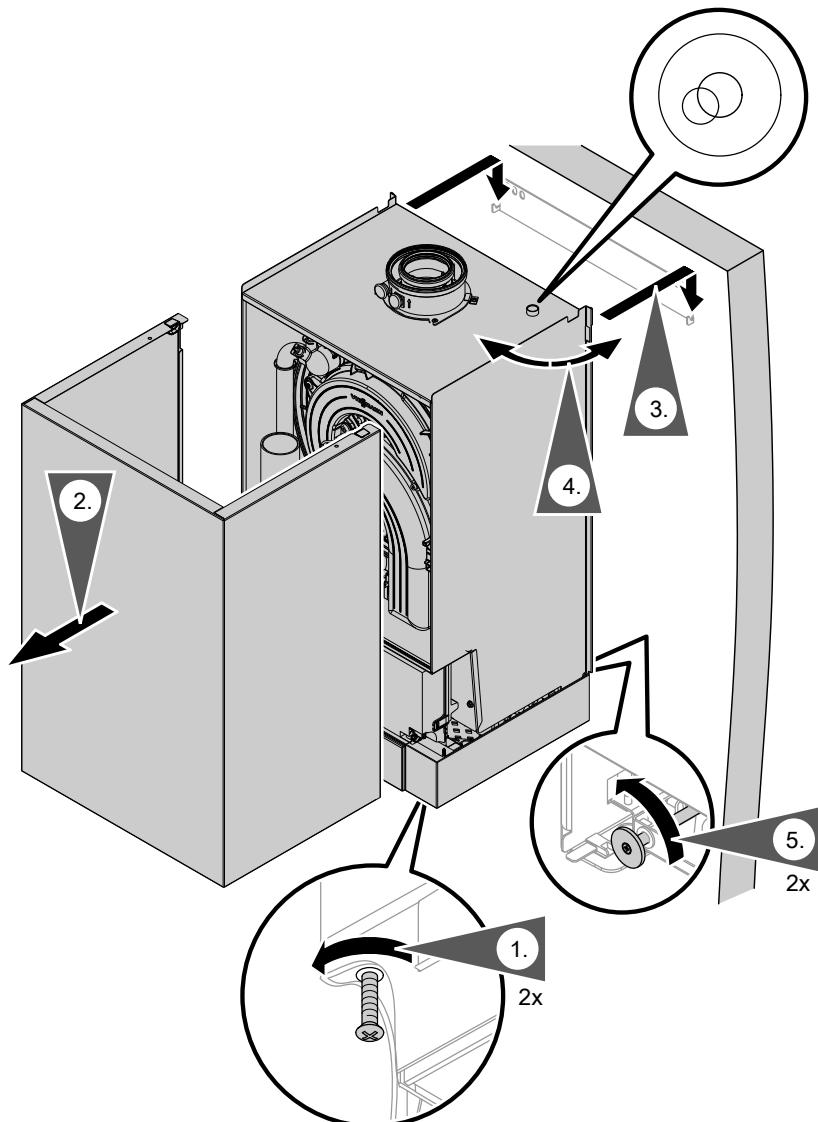
Mounting the boiler and making connections (cont.)

Note on step 4
Place the supplied circular level on the boiler and align boiler vertically using the adjusting screws.

Connection on the heating water side
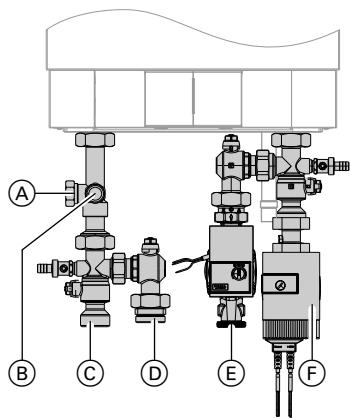
Connect the boiler to the on-site pipework.

Note
Connection layout shown with the connection sets available as accessories. Provide the required connections when using on-site fittings.

(A) Expansion vessel
(B) Safety valve
(C) Heating flow
(D) Cylinder flow
(E) Cylinder return
(F) Heating return

Flue gas connection

Note
Only use the "System certificate" and "Skoberne GmbH flue system" labels in conjunction with the Viessmann flue system made by Skoberne.

Connect the balanced flue.

Flue system installation instructions

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Flue gas connection (cont.)

Do not carry out **commissioning** until the following conditions are met:

■ Free passage through the flue gas pipes.
■ Flue system with positive pressure is gas-tight.
■ Apertures for ensuring sufficient combustion air supply are open and cannot be closed off.
■ Applicable regulations on installing and commissioning flue systems have been followed.

⚠ **Danger**
Leaking or blocked flue systems or an insufficient supply of combustion air cause life threatening poisoning due to carbon monoxide in the flue gas.
Ensure the flue system functions correctly. Apertures for combustion air supply must not be able to be closed off.

Condensate connection
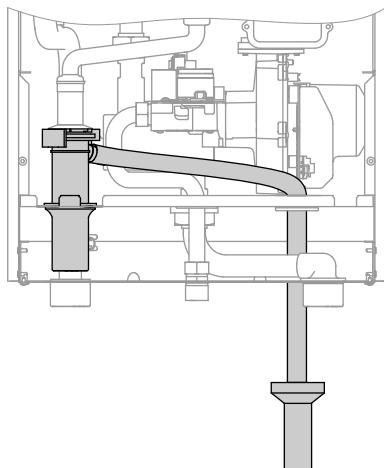
1. Pull the condensate hose far enough out so that no unnecessary bends are created inside the boiler. Check the tightness of the siphon connection.

2. Connect the condensate hose with a constant fall and a pipe vent to the public sewage system or to a neutralising system.

Installation
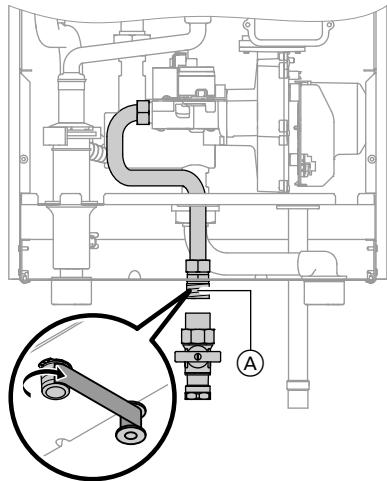
Gas connection

Notes regarding operation with LPG
We recommend the installation of an external safety solenoid valve when installing the boiler in rooms below ground level.

1. Seal gas shut-off valve Ⓐ into the gas supply pipe.

2. Check the gas connection for leaks.

Note
Only use suitable and approved leak detection agents (EN 14291) and devices for the tightness test. Leak detection agents with unsuitable constituents (e.g. nitrides, sulphides) can cause material damage.
Remove residues of the leak detection agent after testing.

! **Please note**
Excessive test pressure may damage the boiler and the gas train.
Maximum test pressure 150 mbar (15 kPa). Where higher pressure is required for tightness tests, disconnect the boiler and the gas train from the main supply pipe (undo the fitting).

3. Purge the gas line.

Conversion to alternative gas types:
Service instructions

Opening the control unit enclosure

! **Please note**
Electronic assemblies can be damaged by electrostatic discharge.
Prior to commencing any work, touch earthed objects, such as heating or water pipes to discharge static loads.

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Opening the control unit enclosure (cont.)

Installation
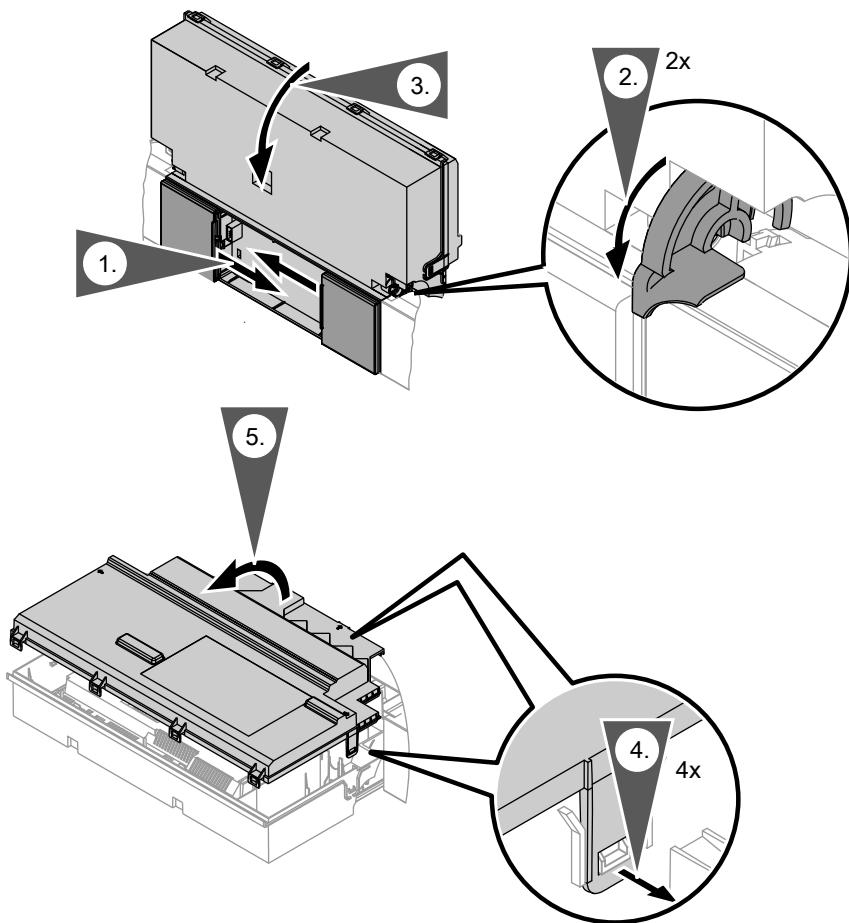
Electrical connections
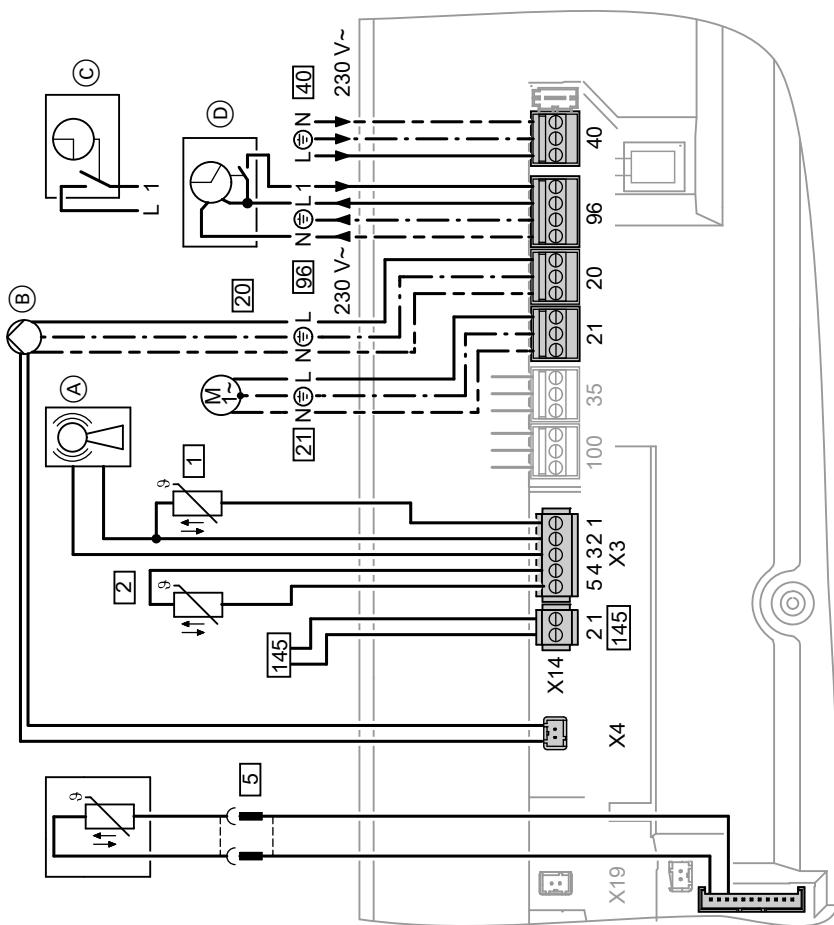
A Radio clock receiver
B Heating circuit pump or boiler circuit pump
C Vitotrol 100, type UTDB (only for constant temperature control units)
When making this connection, remove jumper between "1" and "L".

D Vitotrol 100, type UTA (only for constant temperature control units)
or
Vitotrol 100 wireless receiver, type UTDB-RF
When making this connection, remove jumper between "1" and "L".

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Electrical connections (cont.)

Connections on 230 V~ plug

20 Boiler circuit pump or heating circuit pump
  - Variable speed with 0 - 10 V connection
21 Circulation pump, optional connection:
  - DHW circulation pump
  - External heating circuit pump
  - Circulation pump for cylinder heating
40 Power supply
96 ■ Power supply for accessories
  - External demand/blocking
  - Vitotrol 100 UTA
  - Vitotrol 100 UTDB
  - Vitotrol 100, type UTDB-RF

Connections to LV plug

1 Outside temperature sensor
2 Flow temperature sensor for low loss header (accessory)

5 Cylinder temperature sensor (part of the DHW cylinder connection set)
145 KM BUS subscriber (accessory)
  - Vitotrol 200A or 300A remote control
  - Vitocom 100 GSM
  - Mixer extension kit
  - Solar control module, type SM1
  - Vitosolic
  - AM1 extension
  - EA1 extension
  - Wireless base station

Information on connecting accessories

When connecting accessories observe the separate installation instructions provided with them.

Circulation pump at plug 20

High-efficiency circulation pump, speed-controlled via 0-10 V control voltage

Rated current	2(1) A~
Rated voltage	230 V ~

Note
If a multi-stage circulation pump is connected: Set code 30:0 in group "Boiler/2".
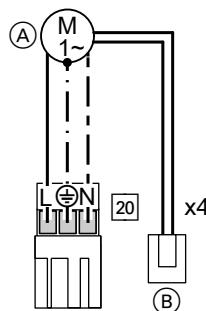
Ⓐ Circulation pump
Ⓑ Plug in 0 - 10 V connection at X4.

Electrical connections (cont.)

Circulation pump at plug ⌷21⌷
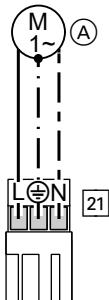
Rated current	2(1) A~	
Rated voltage	230 V~	

Set function of connected component in coding address "39"

Function	Code
DHW circulation pump	39:0
Heating circuit pump for heating circuit without mixer A1	39:1
Circulation pump for cylinder heating (delivered condition)	39:2

Ⓐ Circulation pump

External demand via switching contact
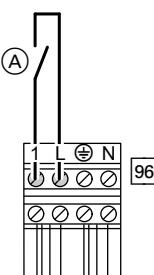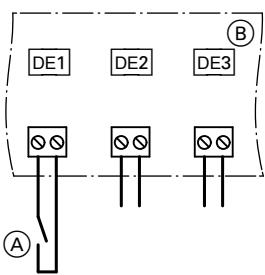
Connection options:
- Extension EA1 (accessory, see separate installation instructions).
- Plug ⌷96⌷.

Connection

! **Please note**
'Live' contacts lead to short circuits or phase failure.
The external connection **must be potential-free**.

Electrical connections (cont.)

Plug 96	EA1 extension
Ⓐ Floating contact When making this connection, remove jumper between 1 and L.	Ⓐ Floating contact Ⓑ EA1 extension

Burner operation is load-dependent if the contact is closed. The boiler water is heated to the value set in coding address "9b" in group **"General"/"1"**. The boiler water temperature is limited by this set value and the electronic maximum limit (coding address "06" in group **"Boiler"/"2"**).

Codes

Plug 96	EA1 extension
"4b:1" in group **"General"/"1"**	Set "3A" (DE1), "3b" (DE2) or "3C" (DE3) in group **"General"/"1"** to 2.

- Select effect of the function on the relevant heating circuit pump in coding address "d7" in group **"Heating circuit"/"5"**.
- Select effect of the function on the circulation pump for cylinder heating in coding address "5F" in group **"DHW"/"3"**.

External demand via 0 – 10 V input

Connection at 0 – 10 V input to **extension EA1**.
Ensure DC separation between the earth conductor and the negative pole of the on-site voltage source.

Installation

Electrical connections (cont.)
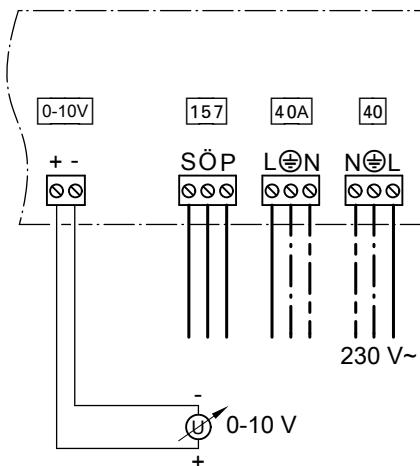
0 – 1 V ≙ No default set boiler water temperature
1 V ≙ Set value 10 °C
10 V ≙ Set value 100 °C

External blocking via switching contact
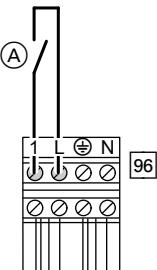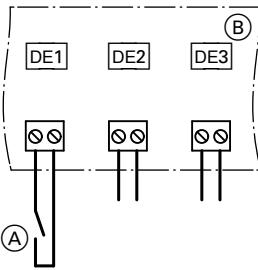
Connection options:
■ Plug 96 .
■ Extension EA1 (accessory, see separate installation instructions).

! **Please note**
'Live' contacts lead to short circuits or phase failure.
The external connection **must be floating**.

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Electrical connections (cont.)

Plug 96	Extension EA1
Ⓐ Floating contact When making this connection, re-move jumper between 1 and L.	Ⓐ Floating contact Ⓑ Extension EA1

The burner is switched off if this contact is closed. The heating circuit pump and circulation pump for cylinder heating are switched according to the set code (see the following table "Codes").

> **!** **Please note**
> When blocked, there is **no frost protection** for the heating system.

Codes

Plug 96	Extension EA1
"4b:2" in group **"General"/"1"**	Set "3A" (DE1), "3b" (DE2) or "3C" (DE3) in group **"General"/"1"** to 3 or 4.

■ Select effect of the function on the heating circuit pump in coding address "d6" in group **"Heating circuit"/"5"**.
■ Select effect of the function on the circulation pump for cylinder heating in coding address "5E" in group **"DHW"/"3"**.

Outside temperature sensor 1

Fitting outside temperature sensor RF (wireless accessory):

Wireless base station

Installation

Electrical connections (cont.)

Fitting location for outside tempera-ture sensor

■ North or north-westerly wall, 2 to 2.5 m above ground level; in multi storey buildings, in the top half of the second floor
■ Not above windows, doors or vents

■ Not immediately below balconies or gutters
■ Never render over

Outside temperature sensor connec-tion

2-core lead, length up to 35 m with a cross-section of 1.5 mm^2

Electrical connections (cont.)

Power supply for accessories at plug 96 (230 V~)

- Installation of boiler outside wet rooms:
  Connect the power supply of accessories to the boiler control unit. This connection is switched directly with the ON/OFF switch of the control unit.
- Installation of boiler in a wet room:
  Do **not** connect the power supply of accessories outside the wet area to the boiler control unit.

If the total system current exceeds 6 A, connect one or more extensions via an ON/OFF switch directly to the mains supply (see next chapter).

Connection of accessories

Power supply and KM BUS

Power supply to all accessories via heat source control unit
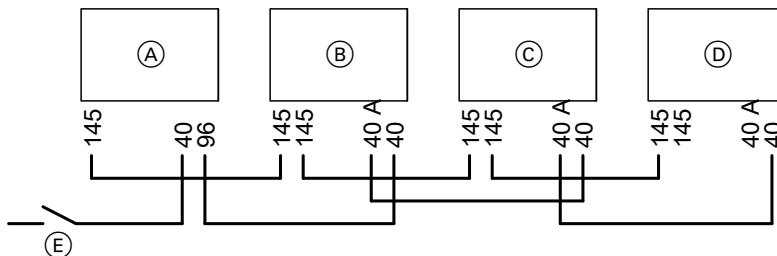
Some accessories with direct power supply
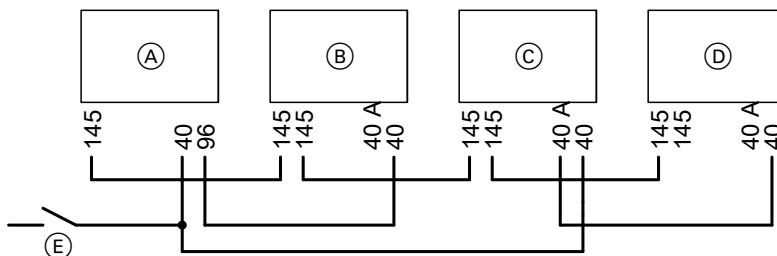
Ⓐ Heat source control unit
Ⓑ Extension kit for heating circuit with mixer M2
Ⓒ Extension kit for heating circuit with mixer M3
Ⓓ Extension AM1, EA1 and/or solar control module, type SM1
Ⓔ ON/OFF switch

Installation

Electrical connections (cont.)

A buffer relay must be fitted if the current flowing to the connected working parts (e.g. circulation pumps) is higher than the safety level of the relevant accessory.

Accessories	Internal fuse protection
Extension kit for heating circuit with mixer	2 A
Extension AM1	4 A
Extension EA1	2 A
Solar control module, type SM1	2 A

Power supply 40

⚠ **Danger**
Incorrect core allocation can result in serious injury and damage to the appliance.
Take care not to interchange wires "L1" and "N".

■ Install an isolator in the power cable which simultaneously separates all non-earthed conductors from the mains with contact separation of at least 3 mm.
Furthermore, we recommend installing an AC/DC-sensitive RCD (RCD class B ⬚ ⬚) for DC (fault) currents that can occur with energy efficient equipment.
■ Max. fuse rating 16 A.

Electrical connections (cont.)

Routing the connecting cables

! **Please note**
If connecting cables touch hot components they will be damaged.

Route and attach the power cables in such a way that the maximum permissible temperatures of the cables are not exceeded.
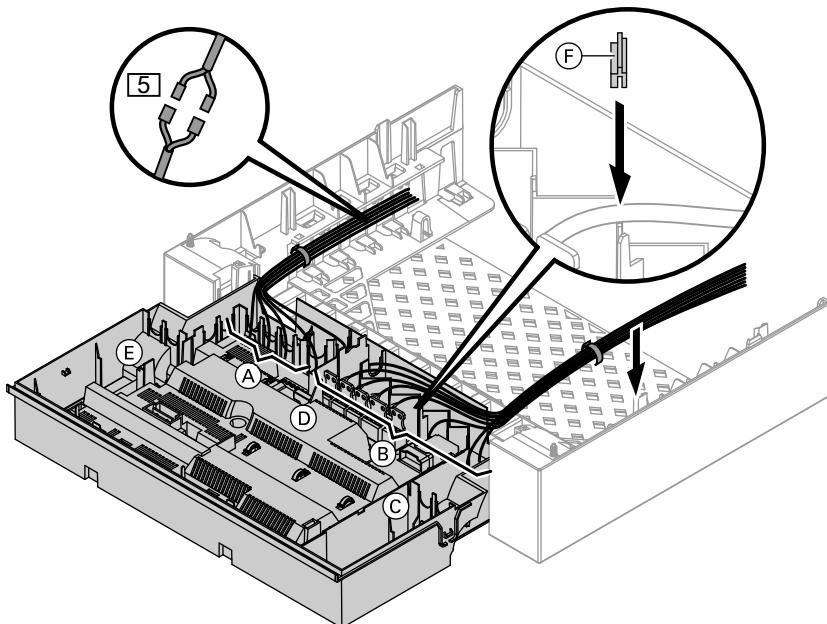
Ⓐ LV terminals
Ⓑ 230 V terminals
Ⓒ Internal extension
Ⓓ Main PCB
Ⓔ Communication module

Ⓕ Cable grommet for power cable
5 Plugs for connecting the cylinder temperature sensor to the cable harness

Installation

Electrical connections (cont.)

Remove the existing cable grommet when using cables with a larger cross-section (up to $\varnothing$ 14 mm). Secure the cable with cable grommet Ⓕ integrated into the casing base (black).

Closing the control unit enclosure and inserting the programming unit
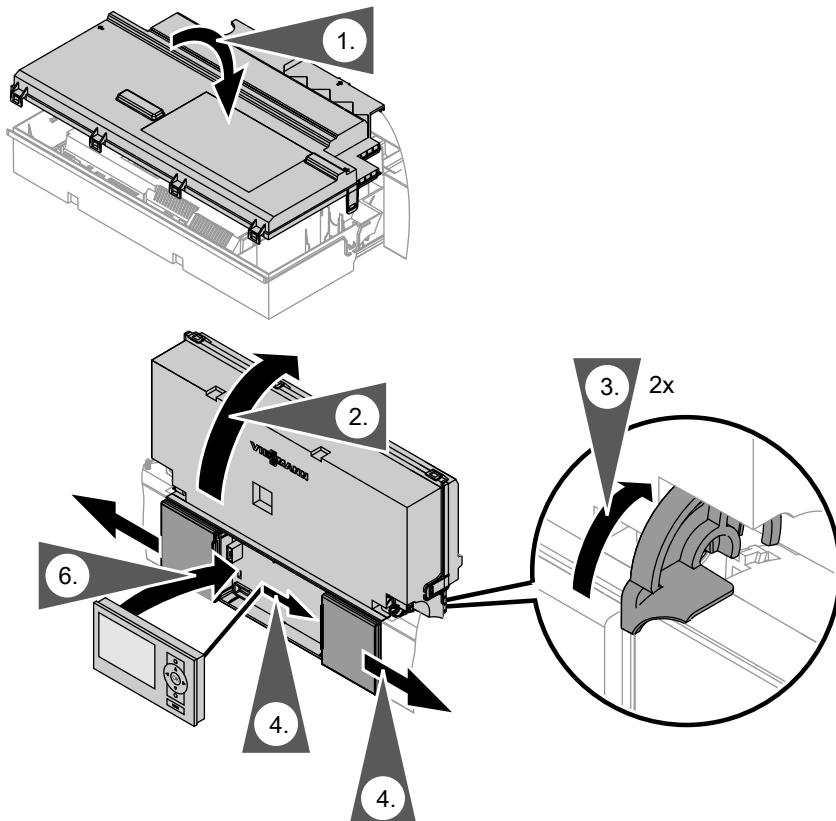
Closing the control unit enclosure and… (cont.)

Insert programming unit (packed separately) into the control unit support.

Note
The programming unit can also be inserted into a wall mounting base (accessory) near the boiler.

Wall mounting base installation instructions

Installation

Steps - commissioning, inspection and maintenance

For further information regarding the individual steps, see the page indicated

Commissioning steps
Inspection steps
Maintenance steps

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Steps - commissioning, inspection and… (cont.)

Commissioning steps

Inspection steps

Maintenance steps   Page

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Service

Further details regarding the individual steps

Opening the boiler
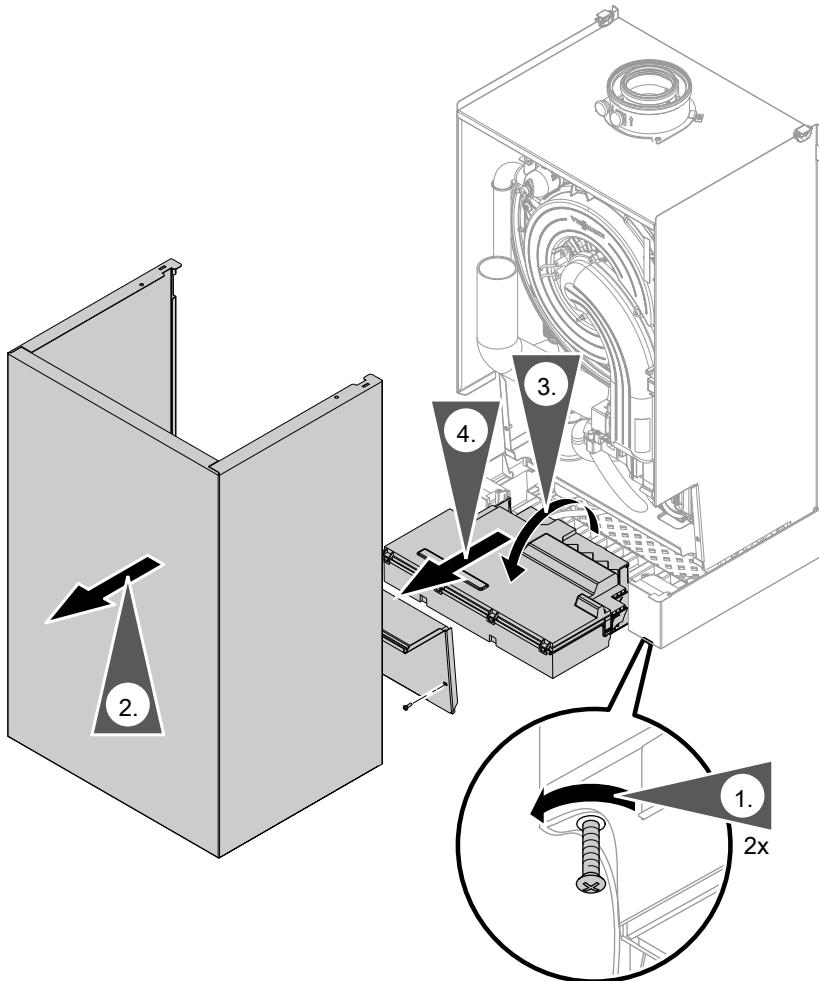
Further details regarding the individual steps (cont.)

Filling the heating system

Fill water

! **Please note**
Unsuitable fill water increases the level of deposits and corrosion and may lead to boiler damage.
■ Flush the heating system thoroughly before filling.
■ Only use fill water of potable quality.

■ Antifreeze suitable for heating systems can be added to the fill water. The antifreeze manufacturer must verify its suitability.
■ Fill and top-up water with a water hardness in excess of the following values must be softened, e.g. with a small softening system for heating water.

Total permissible hardness of the fill and top-up water

Total heating output	Specific system volume		
kW	< 20 l/kW	≥ 20 l/kW to < 50 l/kW	≥ 50 l/kW
≤ 50	≤ 3.0 mol/m^3 (16.8 °dH)	≤ 2.0 mol/m^3 (11.2 °dH)	< 0.02 mol/m^3 (0.11 °dH)
> 50 to ≤ 200	≤ 2.0 mol/m^3 (11.2 °dH)	≤ 1.5 mol/m^3 (8.4 °dH)	< 0.02 mol/m^3 (0.11 °dH)
> 200 to ≤ 600	≤ 1.5 mol/m^3 (8.4 °dH)	≤ 0.02 mol/m^3 (0.11 °dH)	< 0.02 mol/m^3 (0.11 °dH)
> 600	< 0.02 mol/m^3 (0.11 °dH)	< 0.02 mol/m^3 (0.11 °dH)	< 0.02 mol/m^3 (0.11 °dH)

Service

Further details regarding the individual steps (cont.)
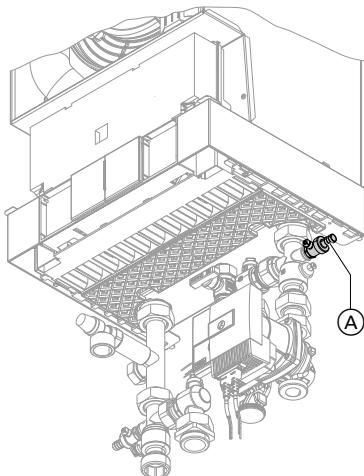
1. Check the pre-charge pressure of the diaphragm expansion vessel.

2. Close the gas shut-off valve.

3. Fill the heating system via boiler drain & fill valve (A). System pressure > 1.0 bar (0.1 MPa).

4. Close boiler drain & fill valve (A).

Venting the boiler by flushing
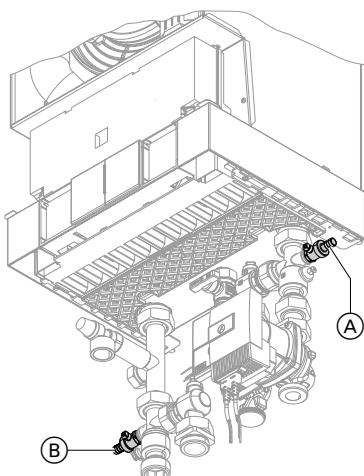
1. Close the shut-off valves on the heating water side.

2. Connect the drain hose to boiler drain & fill valve (B).

3. Open valves (A) and (B). Vent under mains pressure until no more air noise can be heard.

4. Close taps (A) and (B); open the shut-off valves on the heating water side.

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Further details regarding the individual steps (cont.)

Selecting the language (if required) - only for weather-compensated control units

At the commissioning stage, the display is in German (factory setting).

Extended menu:
1. ≡:
2. **"Einstellungen"**
3. **"Sprache"**
4. Select the required language with ▲/▼.

```
┌─────────────────────────────┐
│ Sprache                     │
├─────────────────────────────┤
│ Deutsch              DE ☑  │
│ Bulgarski            BG ☐  │
│ Cesky                CZ ☐  │
│ Dansk                DK ☐  │
├─────────────────────────────┤
│     Wählen mit          ⬍  │
└─────────────────────────────┘
```

Setting the time and date (if required) - only for weather-compensated control units

The time and date need to be reset during commissioning or after a prolonged time out of use.

Extended menu:
1. ≡:
2. **"Settings"**

3. **"Time / Date"**
4. Set current time and date.

Note on automatic testing of the flue gas temperature sensor

Weather-compensated control unit	Constant temperature control unit
As soon as the time and date have been set, the control unit automatically checks the function of the flue gas temperature sensor. The display shows: **"Flue gas temp sensor test"** and **"Active"**.	Immediately after being switched on, the control unit automatically checks the function of the flue gas temperature sensor. The display shows: **"A"**.
Note *If the flue gas temperature sensor is incorrectly positioned, commissioning will be cancelled and fault message A3 will be shown (see page 139).*	*Note* *If the flue gas temperature sensor is incorrectly positioned, commissioning will be cancelled and fault message A3 will be shown (see page 139).*

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Further details regarding the individual steps (cont.)

Venting the heating system

1. Close the gas shut-off valve and switch the control unit ON.

2. Activate venting program (see following steps).

Note
For function and sequence of the venting program, see page 154.

3. Check system pressure.

Activating the venting function

Weather-compensated control unit	Constant temperature control unit
Service menu	Service menu
1. Press **OK** and ☰: simultaneously for approx. 4 s.	1. Press **OK** and ☰: simultaneously for approx. 4 s.
2. **"Service functions"**	2. Select **"⑤"** with ▶ and confirm with **OK**.
3. **"Venting"** Venting function is enabled.	**"ON"** flashes.
4. Ending venting function: Press **OK** or ⬑.	3. Activate the venting function with **OK**. **"EL on"** is shown constantly.
	4. Ending venting function: Press ⬑.

Filling the siphon with water

Multi boiler system:
Fill the siphon in the flue gas header with water as well.

Further details regarding the individual steps (cont.)
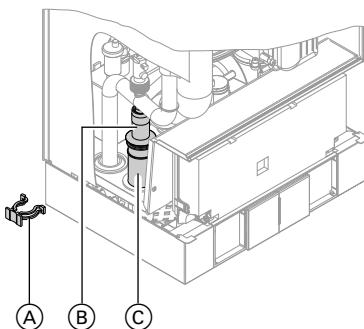
1. Remove retaining clip Ⓐ and pull out insert Ⓑ.

2. Fill siphon Ⓒ with water and reassemble.

   Note
   Never twist the inlet hose during assembly. Route the drain hose without any bends and with a constant fall.

Designating heating circuits - only for weather-compensated control units

In the delivered condition, heating circuits are designated "Heating circuit 1", "Heating circuit 2" and "Heating circuit 3" (if installed).
If the system user prefers, heating circuits can be re-designated to suit the specific system.

To enter names for heating circuits:

Operating instructions

Checking the gas type

The boiler is equipped with an electronic combustion controller that adjusts the burner for optimum combustion in accordance with the prevailing gas quality.
■ For operation with natural gas no adjustment is therefore required across the entire Wobbe index range. The boiler can be operated in the Wobbe index range 9.5 to 15.2 kWh/m^3 (34.2 to 54.7 MJ/m^3).
■ For operation with LPG the burner must be converted (see "Gas type conversion" on page 36).

1. Determine the gas type and Wobbe index by asking your local gas supply utility or LPG supplier.

2. For operation with LPG, convert the burner (see page 36).

3. Record the gas type in the report on page 179.

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Further details regarding the individual steps (cont.)

Gas type conversion (only for operation with LPG)
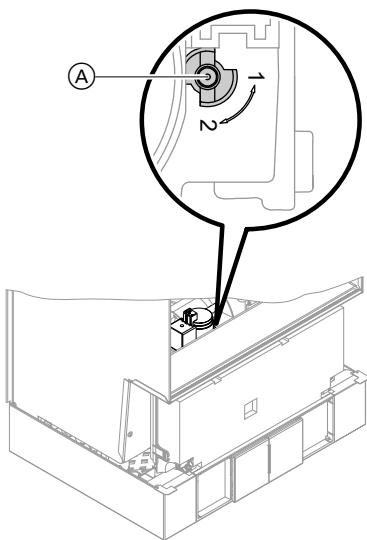
1. Set adjusting screw Ⓐ on the gas train to "2".

2. Turn on the ON/OFF switch "Ⓞ".

3. Select the gas type in coding address "82":
   - Call up code 2
   - Call up **"General"** (weather-compensated control unit)
     or
     Group **"1"** (constant temperature control unit)
   - In coding address "11", select value "9"
   - In coding address "82", select value "1" (LPG operation)
   - In code "11", select value ≠ "9".
   - End service functions.

4. Open the gas shut-off valve.

5. Affix label "G 31" in a clearly visible position near the gas train on the cover panel.
   The label is supplied with the technical documentation.

Function sequence and possible faults

Control unit issues a heat demand	Display No	Action Increase set value and ensure heat is drawn off

Further details regarding the individual steps (cont.)

↓ Yes			
Fan starts	No →	After approx. 51 s, fault F9	→	Check the fan, fan connecting cables, power at the fan and fan control

↓ Yes

| Ignition | No → | Fault EE | → | Check ignition module (control voltage 230 V across plugs "X2.1" and "X2.2"). Check the gas supply. |

↓ Yes

| Gas train opens | No → | Fault EE | → | Check the gas train (control voltage 230 V) and gas supply pressure |

↓ Yes

| Ionisation current builds Symbol ⫸ | No → | Fault EE | → | Check the ionisation electrode adjustment and the gas line for airlocks. |

↓ Yes

| Burner in operation | No → | Stops below the set boiler water temperature and restarts immediately | → | Check the flue system for tightness (flue gas recirculation); check the gas flow pressure |

Service

▶▶

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Further details regarding the individual steps (cont.)

Yes

Automatic calibration of the combustion controller	Fault E3	Ensure adequate heat transfer. Press reset button **R**.
	No →	
	Fault Eb	Check gap between ionisation electrode and burner gauze assembly. Check allocation of gas type (coding address 82, gas train setting). Check flue system; remedy flue gas recirculation if required. Press reset button **R**.

Checking the static and supply pressure

⚠️ **Danger**
CO formation as a result of incorrect burner adjustment can have serious health implications. Check the CO content before and after carrying out work on gas appliances.

Operation with LPG
Purge the LPG tank twice during commissioning or replacement. Vent the tank and gas connection line thoroughly after purging.

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Further details regarding the individual steps (cont.)
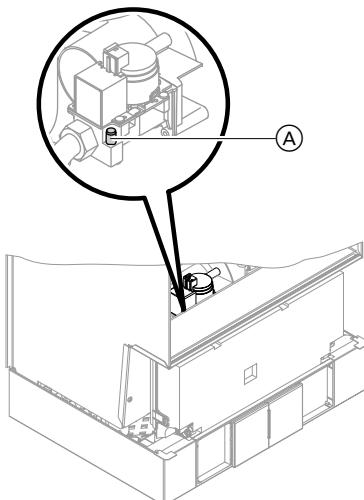
1. Close the gas shut-off valve.

2. Release screw Ⓐ inside test connector "PE" on the gas train, but do not remove it. Connect the pressure gauge.

3. Open the gas shut-off valve.

4. Check the static pressure and record the actual value in the report on page 179.
   Set value: max. 57.5 mbar (5.75 kPa).

5. Start the boiler.

   Note
   *During commissioning, the boiler can enter a fault state because of airlocks in the gas line. After approx. 5 s, press **R** to reset the burner.*

6. Check the supply (flow) pressure. Set values:
   ■ Natural gas 20 mbar (2 kPa)
   ■ LPG 50 mbar (5 kPa)

   Note
   Use a suitable measuring instrument with a resolution of at least 0.1 mbar (0.01 kPa) to check the supply pressure.

7. Record the actual value in the service report.
   Take action as shown in the following table.

Service

Further details regarding the individual steps (cont.)

8. Shut down the boiler. Close the gas shut-off valve and remove the pressure gauge.
   Close test connector Ⓐ with the screw.

9. ⚠ **Danger**
   Gas escaping from the test connector leads to a risk of explosion.
   Check for gas tightness.

   Open the gas shut-off valve. Start the boiler and check for gas tightness at test connector Ⓐ.

Supply (flow) pressure for natural gas	Supply (flow) pressure for LPG	Actions
Below 15 mbar (1.5 kPa)	Below 42.5 mbar (4.25 kPa)	Do not commission the boiler. Notify your gas supply utility or LPG supplier.
15 to 25 mbar (1.5 to 2.5 kPa)	42.5 to 57.5 mbar (4.25 to 5.75 kPa)	Start the boiler.
Above 25 mbar (2.5 kPa)	Above 57.5 mbar (5.75 kPa)	Position a separate gas pressure governor upstream of the system and regulate the pre-charge pressure to 20 mbar (2 kPa) for natural gas or 50 mbar (5 kPa) for LPG. Notify your gas supply utility or LPG supplier.

Setting max. heating output

The maximum output for **heating operation** can be limited. The limit is set via the modulation range. The max. adjustable heating output is limited upwards by the boiler coding card.

Further details regarding the individual steps (cont.)

Weather-compensated control unit	Constant temperature control unit
Service menu	Service menu
1. Press **OK** and ☰ simultaneously for approx. 4 s.	1. Press **OK** and ☰ simultaneously for approx. 4 s.
2. **"Service functions"**	2. Select **"③"** with ▶ and confirm with **OK**.
3. **"Max. output"**	A value flashes on the display (e.g. **"85"**) and **"▷"** appears. In the delivered condition, this value represents 100 % of rated heating output.
4. **"Change?"** Select **"Yes"**. A value is shown on the display (e.g. **"85"**). In the delivered condition, this value represents 100 % of rated heating output.	
5. Set the required value.	3. Select required value and confirm with **OK**.

Checking the balanced flue system for tightness (annular gap check)
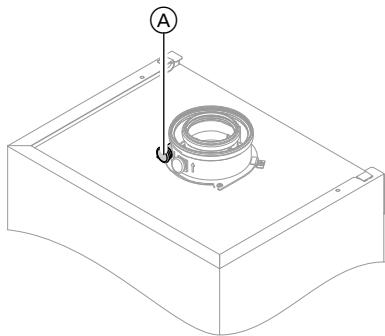
(A) Combustion air aperture

For balanced flue systems tested together with the heat source, there is no requirement for a tightness test (over-pressure test) during commissioning by the flue gas inspector.

In this case, we recommend that your heating contractor carries out a simple tightness test during the commissioning of your system. For this it would be sufficient to check the CO_2 or O_2 concentration in the combustion air at the annular gap of the balanced flue pipe.
If the CO_2 concentration is less than 0.2 % or the O_2 concentration is greater than 20.6 %, the flue pipe is deemed to be sufficiently gas tight.
If actual CO_2 values are greater or O_2 values are lower, then pressure test the flue pipe with a static pressure of 200 Pa.

Service

Further details regarding the individual steps (cont.)

Removing the burner and checking the burner gasket
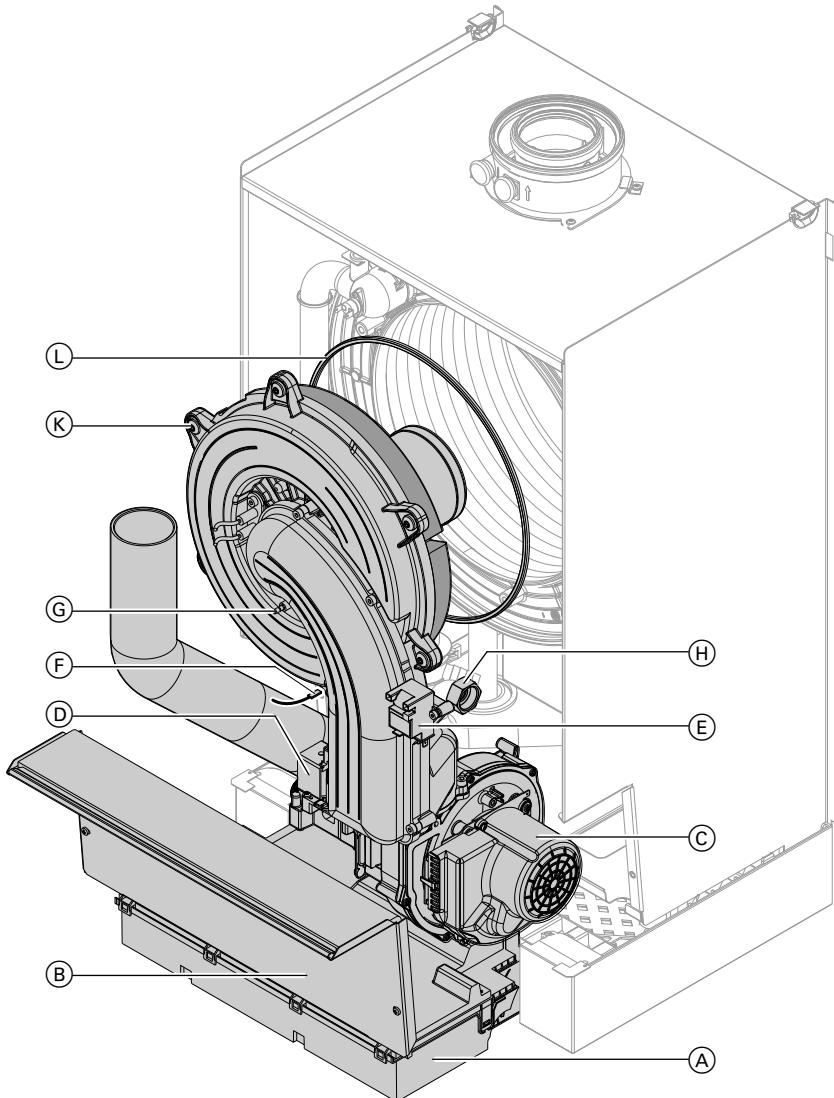
1. Turn off the ON/OFF switch on the control unit and the power supply.

2. Close the gas shut-off valve and safeguard against reopening.

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Further details regarding the individual steps (cont.)

3. Pivot control unit Ⓐ forwards.

4. Remove cover panel Ⓑ.

5. Remove the electrical cables from the following components:
- Fan motor Ⓒ
- Gas train Ⓓ
- Ignition unit Ⓔ
- Earthing point Ⓕ
- Ionisation electrode Ⓖ

6. Undo gas supply pipe fitting Ⓗ.

7. Undo 6 screws Ⓚ and remove the burner.

> **!** **Please note**
> To prevent damage, never touch the mesh of the burner gauze assembly.

8. Check burner gasket Ⓛ for damage and replace if required.

Service

Further details regarding the individual steps (cont.)

Checking the burner gauze assembly and replacing it if required
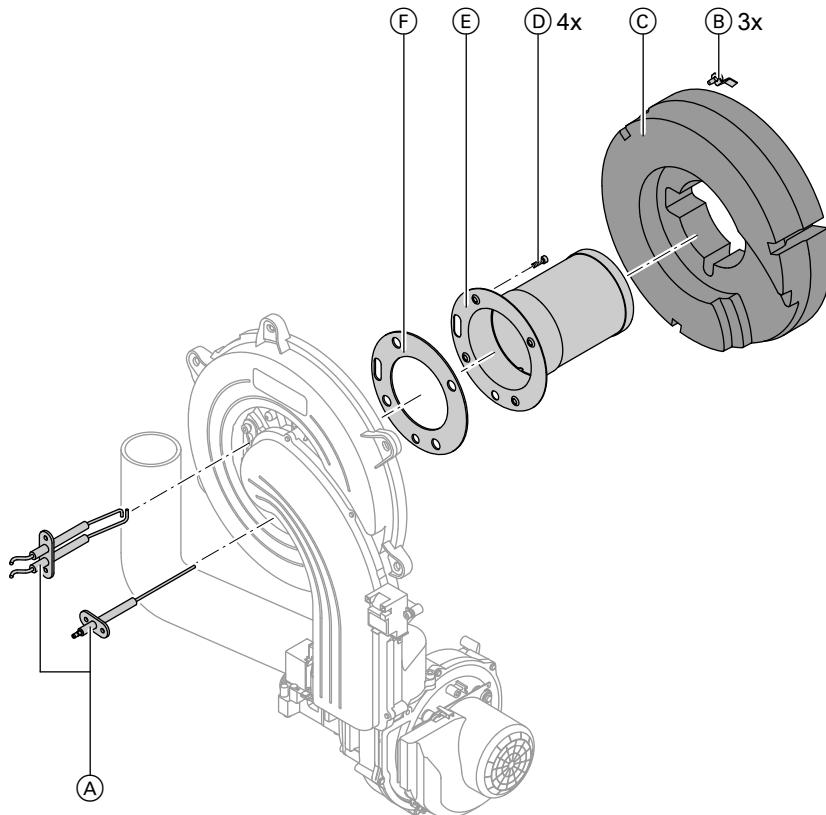
1. Remove electrodes Ⓐ.

2. Undo 3 retaining clips Ⓑ on thermal insulation ring Ⓒ and remove thermal insulation ring Ⓒ.

3. Undo 4 Torx screws Ⓓ and remove burner gauze assembly Ⓔ.

4. Remove old burner gauze assembly gasket Ⓕ.

5. Insert a new burner gauze assembly with a new gasket and secure with 4 Torx screws.

   Note
   Torque: 4.5 Nm

6. Refit thermal insulation ring Ⓒ and electrodes Ⓐ.

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Further details regarding the individual steps (cont.)

Checking the flue gas non-return device
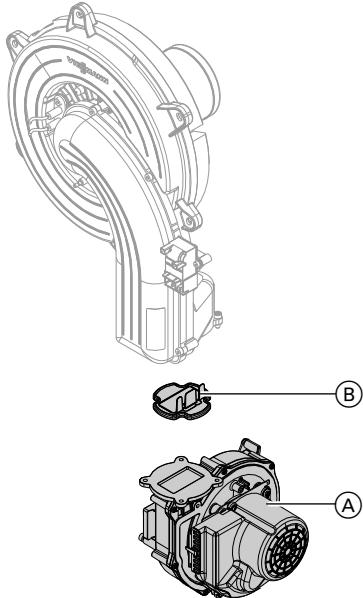
1. Undo 3 screws and remove fan Ⓐ.

2. Remove flue gas non-return device Ⓑ.

3. Check the damper and gasket for dirt and damage. Replace if required.

4. Refit flue gas non-return device Ⓑ.

5. Refit fan Ⓐ and secure with 3 screws.
   Torque: 3.0 Nm

Service

Further details regarding the individual steps (cont.)

Checking and adjusting the ignition and ionisation electrodes

6^{+2}_{0}

5^{+3}_{0} $4^{+0.5}_{0}$

$14^{\pm1}$
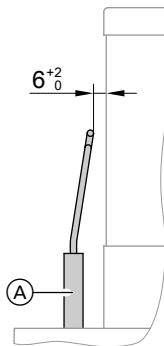
Ⓐ Ignition electrodes
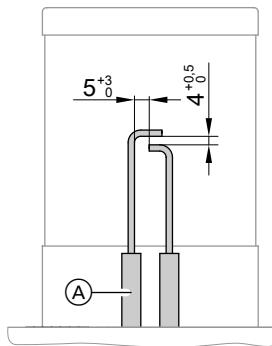
Ⓑ Ionisation electrode
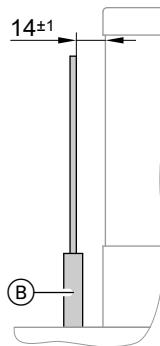
1. Check the electrodes for wear and contamination.

2. Clean the electrodes with a small brush (not with a wire brush) or sandpaper.

> **!** **Please note**
> Wire mesh:
> Do not damage.

3. Check the electrode gaps. If the gaps are not as specified or the electrodes are damaged, replace and align the electrodes together with new gaskets. Tighten the screws of the electrodes. Torque: 2.0 Nm

Cleaning the heating surfaces

> **!** **Please note**
> Do not damage the surfaces of the heat exchanger that come into contact with hot gas. This can lead to corrosion damage.
> **Never use brushes to clean the heat exchanger.**
> Brushing can cause deposits to become lodged in the gaps between the coils.

Note
Discolouration on the heat exchanger surface is a normal sign of use. It has no bearing on the function and service life of the heat exchanger.
The use of chemical cleaning agents is not required.

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Further details regarding the individual steps (cont.)
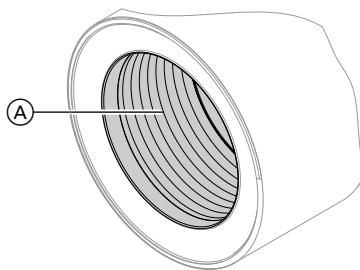
1. Use a vacuum cleaner to remove combustion residues from heating surface Ⓐ of the heat exchanger.

2. Flush heating surface Ⓐ with water.

3. Check condensate drain and clean siphon. See the following chapter.

4. Flush the heating surface again with water (the siphon is also filled with water in the process).

Installing the burner

1. Insert the burner and tighten the screws diagonally. Torque: 8.5 Nm

2. Install the gas supply pipe with a new gasket and tighten the fitting. Torque: 15 Nm

3. Check the gas connections for tightness.

   ⚠️ **Danger**
   Escaping gas leads to a risk of explosion.
   Check the fitting for gas tightness.

4. Connect the electrical cables/leads to the corresponding components.

Checking the condensate drain and cleaning the siphon

Multi boiler system:
Clean the siphon in the flue gas header as well.

Further details regarding the individual steps (cont.)
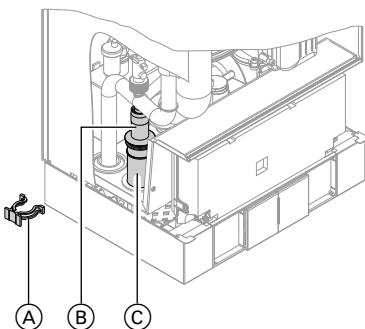
1. Remove retaining clip (A) and pull out insert (B).

2. Clean siphon (C) and check that the condensate can drain freely.

3. Fill siphon (C) with water and reassemble.

Note
Never twist the inlet hose during assembly. Route the drain hose without any bends and with a constant fall.

Checking the diaphragm expansion vessel and system pressure

Note
Check the diaphragm expansion vessel when the system is cold.

1. Drain the system or close the cap valve on the diaphragm expansion vessel and reduce the pressure until the pressure gauge indicates "0".

2. If the diaphragm expansion vessel pre-charge pressure is lower than the static system pressure: top up with nitrogen until the pre-charge pressure is 0.1 to 0.2 bar (10 to 20 kPa) higher than the static pressure.

3. Top up with water until the charge pressure of the cooled system is 0.1 to 0.2 bar (10 to 20 kPa) higher than the pre-charge pressure of the diaphragm expansion vessel.
Permiss. operating pressure: 4 bar (0.4 MPa)

Checking all gas equipment for tightness at operating pressure

⚠ **Danger**
Escaping gas leads to a risk of explosion.
Check all gas equipment for tightness.

Note
Only use suitable and approved leak detection agents (EN 14291) and devices for the tightness test. Leak detection agents with unsuitable constituents (e.g. nitrides, sulphides) can cause material damage.

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Further details regarding the individual steps (cont.)

Remove residues of the leak detection agent after testing.

Checking combustion quality

The electronic combustion controller automatically ensures optimum combustion quality. During commissioning/ maintenance, only the combustion values need to be checked. For this, measure the CO content plus the CO_2 or O_2 content. For a description of the electronic combustion controller functions, see page 160.

Note
To prevent operating faults and damage, operate the appliance with uncontaminated combustion air.

CO content
■ The CO content must be < 1000 ppm for all gas types.

CO_2 or O_2 content
■ The CO_2 content must be within the following limits for upper and lower heating output respectively:
 – 7.5 to 9.5 % for natural gas E and LL
 – 8.8 to 11.1 % for LPG P
■ For all gas types, the O_2 content must be between 4.0 and 7.6 %.

If the actual CO_2 or O_2 values lie outside their respective ranges, check the balanced flue system for tightness, see page 41.

Note
During commissioning, the combustion controller carries out an automatic calibration. Only measure the emissions approx. 30 s after the burner has started.
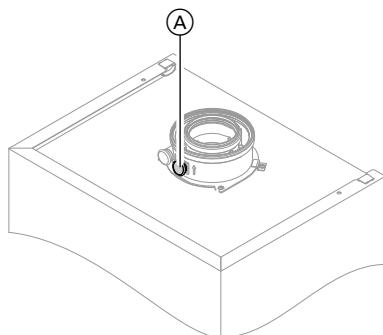
1. Connect a flue gas analyser at flue gas port Ⓐ on the boiler flue connection.

2. Open the gas shut-off valve, start the boiler and create a heat demand.

3. Set the lower heating output (see page 50).

4. Check the CO_2 content. Should the actual value deviate from the aforementioned ranges by more than 1 %, implement steps on page 49.

5. Enter the actual values into the report.

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Further details regarding the individual steps (cont.)

6. Set the upper heating output (see page 50).

7. Check the CO_2 content. Should the actual value deviate from the afore-mentioned ranges by more than 1 %, implement steps on page 49.

8. After testing, press **OK**.

9. Enter the actual values into the report.

Select higher/lower heating output

Weather-compensated control unit	Constant temperature control unit
Service menu	Service menu
1. Press **OK** and ☰⋮ simultaneously for approx. 4 s.	1. Press **OK** and ☰⋮ simultaneously for approx. 4 s.
2. **"Actuator test"**	2. Select **"↻"** with ▶ and confirm with **OK**. The display shows **"I"** and **"ON"** flashes.
3. Select the lower heating output: Select **"Base load OFF"**. Then **"Base load ON"** appears and the burner operates at its lower heating output.	3. Select the lower heating output: Press **OK**, **"ON"** will be displayed constantly.
4. Select the upper heating output: Select **"Full load OFF"**. Then **"Full load ON"** appears and the burner operates at its upper heating output.	4. Select the upper heating output: Press ↩.
5. Ending output selection: Press ↩.	5. Select **"2"** with ▶; **"ON"** flashes.
	6. Press **OK**, **"ON"** will be displayed constantly.
	7. Ending output selection: Press ↩.

Matching the control unit to the heating system

The control unit must be matched to the equipment level of the system. Various system components are recognised automatically by the control unit and the relevant codes are adjusted automatically.

■ For the selection of an appropriate scheme, see the following diagrams.
■ For individual coding steps, see page 65.

Further details regarding the individual steps (cont.)

System version 1

One heating circuit without mixer A1, with or without DHW heating, with low loss header
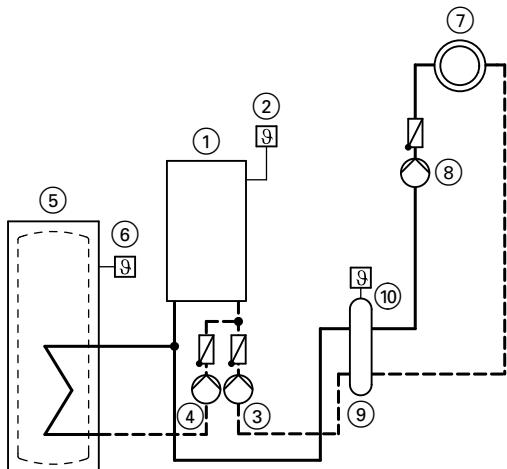
ID: 4605521_1304_02

① Vitodens 200-W
② Outside temperature sensor (only for weather-compensated control units)
  or
  Vitotrol 100 (only for constant temperature control units)
③ Boiler circuit pump
④ Circulation pump for cylinder heating

⑤ DHW cylinder
⑥ Cylinder temperature sensor
⑦ Heating circuit without mixer A1 (heating circuit 1)
⑧ Heating circuit pump A1
⑨ Low loss header
⑩ Flow temperature sensor, low loss header

Function/system components	Code	
	Set	**Group**
Operation with LPG	82:1	**"General"/1**
System with low loss header and without DHW circulation pump: Heating circuit pump A1 connected at AM1 extension, terminal A1	—	

Service

▶▶

Further details regarding the individual steps (cont.)

Function/system components	Code	
	Set	**Group**
System with low loss header and with DHW circulation pump: Heating circuit pump A1 connected at AM1 extension, terminal A1	—	
DHW circulation pump connected at internal extension H1 or H2	—	
System with low loss header	04:0	**"Boiler"/1**

System version 2

One heating circuit with mixer M2, with or without DHW heating, with low loss header
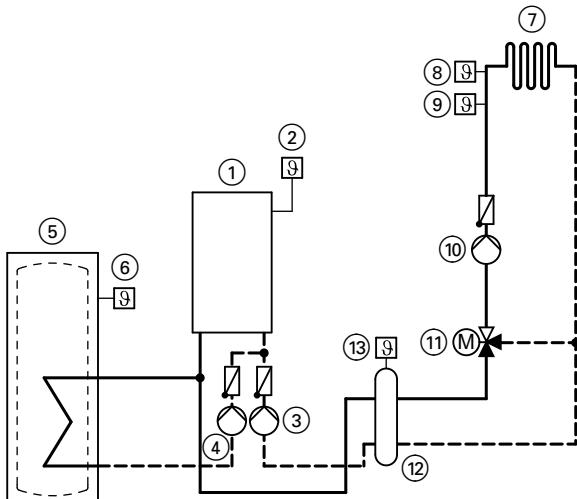
ID: 4605522_1304_02

① Vitodens 200-W
② Outside temperature sensor
③ Boiler circuit pump
④ Circulation pump for cylinder heating
⑤ DHW cylinder
⑥ Cylinder temperature sensor

⑦ Heating circuit with mixer M2 (heating circuit 2)
⑧ Temperature limiter to restrict the maximum temperature of underfloor heating systems
⑨ Flow temperature sensor M2
⑩ Heating circuit pump M2

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Further details regarding the individual steps (cont.)

(11) Extension kit, mixer M2
(12) Low loss header

(13) Flow temperature sensor, low loss header

Function/system components	Code	
	Set	**Group**
Operation with LPG	82:1	**"General"**
System **only** with one heating circuit with mixer with extension kit for mixer (without unregulated heating circuit)		
■ With DHW cylinder	00:4	**"General"**
■ Without DHW cylinder	00:3	**"General"**
System **with** DHW circulation pump DHW circulation pump connected at internal extension H1 or H2	—	
System with low loss header	04:0	**"Boiler"**

System version 3

One heating circuit with mixer M2, with system separation, with or without DHW heating
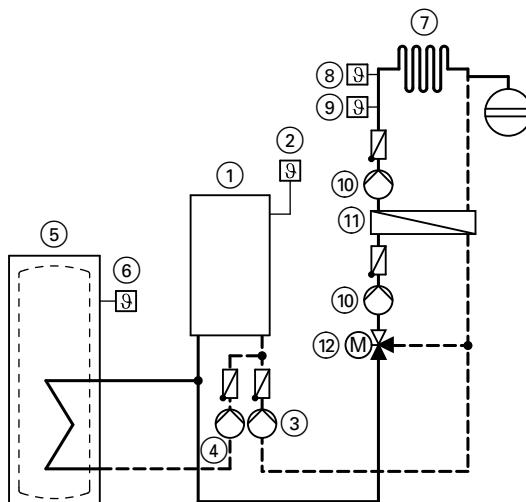
ID: 4605523_1304_02

(1) Vitodens 200-W

(2) Outside temperature sensor

Service

Further details regarding the individual steps (cont.)

③ Boiler circuit pump
④ Circulation pump for cylinder heating
⑤ DHW cylinder
⑥ Cylinder temperature sensor
⑦ Heating circuit with mixer M2 (heating circuit 2)
⑧ Temperature limiter to restrict the maximum temperature of underfloor heating systems

⑨ Flow temperature sensor M2
⑩ Heating circuit pump M2
⑪ Heat exchanger for system separation
⑫ Extension kit, mixer M2

Function/system components	Code	
	Set	**Group**
Operation with LPG	82:1	**"General"**
System **only** with one heating circuit with mixer with extension kit for mixer (without unregulated heating circuit)		
■ With DHW cylinder	00:4	**"General"**
■ Without DHW cylinder	00:3	**"General"**
System **with** DHW circulation pump DHW circulation pump connected at internal extension H1 or H2	—	

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Further details regarding the individual steps (cont.)

System version 4

One heating circuit without mixer, one heating circuit with mixer M2 (with extension kit), one heating circuit with mixer M3 (with extension kit) and low loss header (with or without DHW heating)
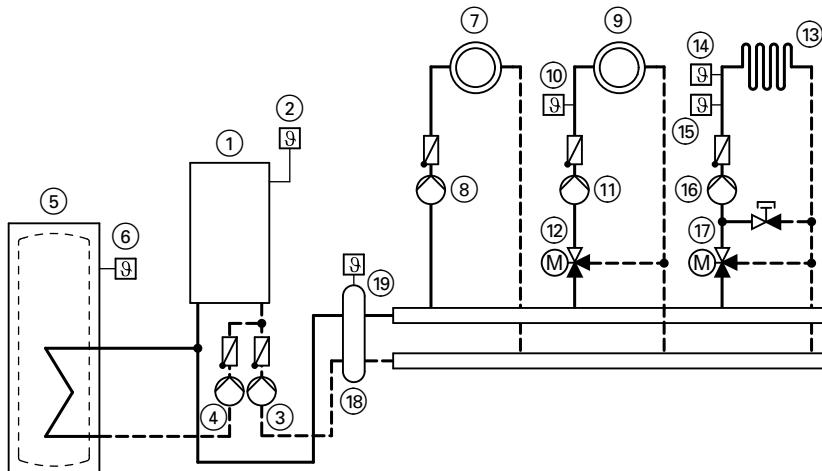
ID: 4605524_1304_02

① Vitodens 200-W
② Outside temperature sensor
③ Boiler circuit pump
④ Circulation pump for cylinder heating
⑤ DHW cylinder
⑥ Cylinder temperature sensor
⑦ Heating circuit without mixer A1 (heating circuit 1)
⑧ Heating circuit pump A1
⑨ Heating circuit with mixer M2 (heating circuit 2)
⑩ Flow temperature sensor M2

⑪ Heating circuit pump M2
⑫ Extension kit, mixer M2
⑬ Heating circuit with mixer M3 (heating circuit 3)
⑭ Temperature limiter to restrict the maximum temperature of underfloor heating systems
⑮ Flow temperature sensor M3
⑯ Heating circuit pump M3
⑰ Extension kit, mixer M3
⑱ Low loss header
⑲ Flow temperature sensor, low loss header

Service

Further details regarding the individual steps (cont.)

Function/system components	Code	
	Set	**Group**
Operation with LPG	82:1	**"General"**
System **only** with two heating circuits with mixer with extension kit for mixer (without unregulated heating circuit)		
■ With DHW cylinder	00:8	**"General"**
■ Without DHW cylinder	00:7	**"General"**
System **without** DHW circulation pump Heating circuit pump A1 connected at internal extension H1 or H2	—	
System **with** DHW circulation pump Heating circuit pump A1 connected at AM1 extension, terminal A1	—	
DHW circulation pump connected at internal extension H1 or H2	—	
System with low loss header	04:0	**"Boiler"**

System version 5

Multi boiler system with several heating circuits with mixer and low loss header (with or without DHW heating)
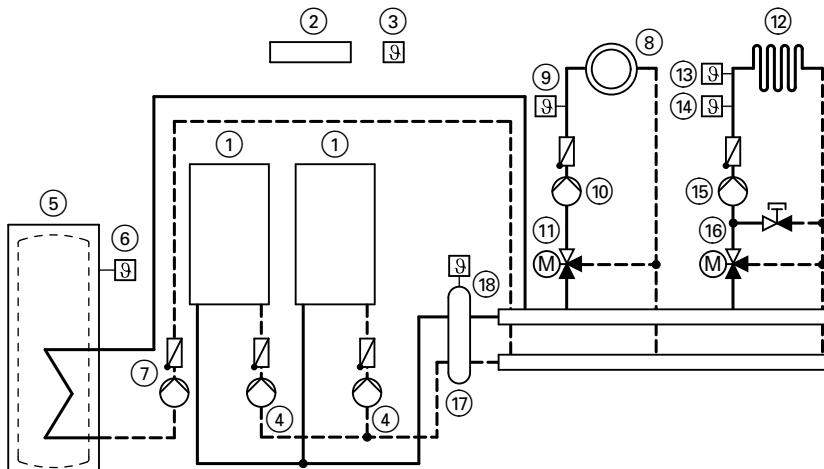
ID: 4605525_1304_01

Further details regarding the individual steps (cont.)

① Vitodens 200-W
② Vitotronic 300-K
③ Outside temperature sensor
④ Boiler circuit pump
⑤ DHW cylinder
⑥ Cylinder temperature sensor
⑦ Circulation pump for cylinder heating
⑧ Heating circuit with mixer M2 (heating circuit 2)
⑨ Flow temperature sensor M2
⑩ Heating circuit pump M2

⑪ Extension kit, mixer M2
⑫ Heating circuit with mixer M3 (heating circuit 3)
⑬ Temperature limiter to restrict the maximum temperature of underfloor heating systems
⑭ Flow temperature sensor M3
⑮ Heating circuit pump M3
⑯ Extension kit, mixer M3
⑰ Low loss header
⑱ Flow temperature sensor, low loss header

Required codes	Address
Multi boiler system with Vitotronic 300-K	01:2

Note
For codes for multi boiler systems, see Vitotronic 300-K installation and service instructions.

Adjusting the heating curves (only for weather-compensated control units)

The heating curves illustrate the relationship between the outside temperature and the boiler water or flow temperature.
To put it simply, the lower the outside temperature, the higher the boiler water or flow temperature.
The boiler water or flow temperature in turn affects the room temperature.

Settings in the delivered condition:
■ Slope = 1.4
■ Level = 0

Note
If the heating system includes heating circuits with mixers, then the flow temperature of the heating circuit without mixer is higher by a selected differential (8 K in the delivered condition) than the flow temperature of the heating circuits with mixers.
*The differential temperature is adjustable via coding address "9F" in the **"General"** group.*

Service

Further details regarding the individual steps (cont.)
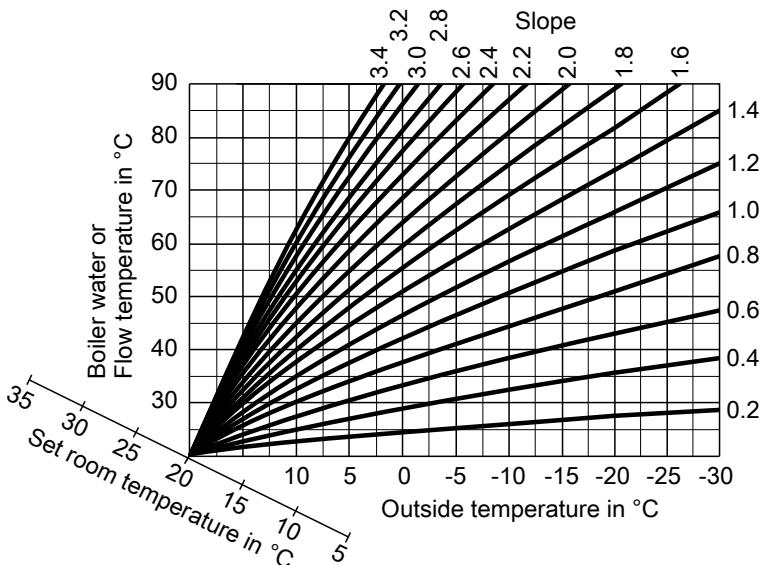
Slope setting ranges:
- Underfloor heating systems: 0.2 to 0.8
- Low temperature heating systems: 0.8 to 1.6

Selecting the set room temperature

Individually adjustable for each heating circuit.
The heating curve is offset along the axis of the set room temperature. With the heating circuit pump logic function enabled, the curve modifies the starting and stopping characteristics of the heating circuit pump.

Standard set room temperature
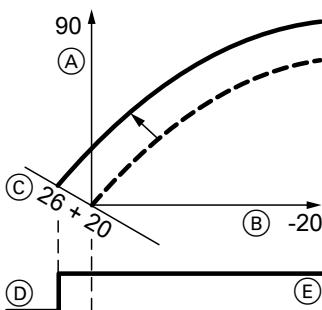
Example 1: Adjustment of the standard set room temperature from 20 to 26 °C

Ⓐ Boiler water temperature or flow temperature in °C
Ⓑ Outside temperature in °C
Ⓒ Set room temperature in °C

Further details regarding the individual steps (cont.)

Ⓓ Heating circuit pump "OFF"
Ⓔ Heating circuit pump "ON"

Changing the standard set room temperature

 Operating instructions
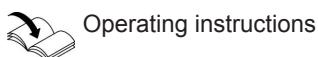
Reduced set room temperature
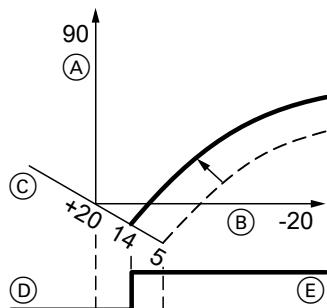
Example 2: Adjustment of the reduced set room temperature from 5 °C to 14 °C

Ⓐ Boiler water temperature or flow temperature in °C
Ⓑ Outside temperature in °C
Ⓒ Set room temperature in °C
Ⓓ Heating circuit pump "OFF"
Ⓔ Heating circuit pump "ON"

Changing the reduced set room temperature

 Operating instructions
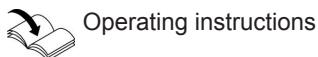
Changing the slope and level

Individually adjustable for each heating circuit.
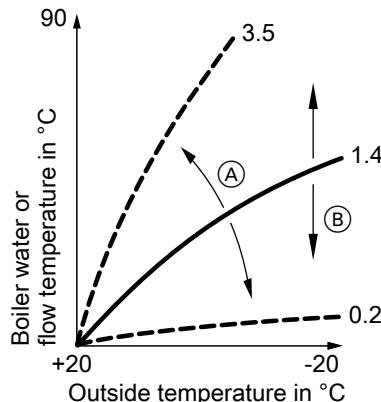
Ⓐ Changing the slope
Ⓑ Changing the level (vertical parallel offset of the heating curve)

Extended menu:
1. ☰
2. **"Heating"**
3. Select heating circuit.
4. **"Heating curve"**
5. **"Slope"** or **"Level"**
6. Select heating curve according to the system requirements.

Further details regarding the individual steps (cont.)

Connecting the control unit to the LON

The LON communication module must be plugged in (if installed as an accessory, see the LON communication module installation instructions).

Note
The data transfer via LON can take several minutes.

Example: Single boiler system with Vitotronic 200-H and Vitocom 200

Set the LON subscriber numbers and further functions via code 2 (see the following table).

Note
*In the same LON system, the same subscriber number must **not** be allocated twice.*
***Only one Vitotronic** may be programmed as fault manager.*

All coding addresses in the table are listed in the "General" group.

Boiler control unit	Vitotronic 200-H	Vitotronic 200-H	Vitocom
LON	LON	LON	
Subscriber no. 1. Code "77:1"	Subscriber no. 10. Code "77:10"	Subscriber no. 11. **Set** code "77:11".	Subscriber no. 99
Control unit is fault manager. Code "79:1"	Control unit is not fault manager. Code "79:0"	Control unit is not fault manager. Code "79:0"	Device is fault manager.
Control unit transmits the time. Code "7b:1"	Control unit receives the time. **Set** code "81:3".	Control unit receives the time. **Set** code "81:3".	Device receives the time.
Control unit transmits outside temperature. **Set** code "97:2".	Control unit receives outside temperature. **Set** code "97:1".	Control unit receives outside temperature. **Set** code "97:1".	—

Further details regarding the individual steps (cont.)

Boiler control unit	Vitotronic 200-H	Vitotronic 200-H	Vitocom
Viessmann system number. Code "98:1"	Viessmann system number. Code "98:1"	Viessmann system number. Code "98:1"	—
LON subscriber fault monitoring. Code "9C:20"	LON subscriber fault monitoring. Code "9C:20"	LON subscriber fault monitoring. Code "9C:20"	—

Carrying out a LON subscriber check

The subscriber check is used to test communication with the system devices connected to the fault manager.

Preconditions:
■ The control unit must be programmed as **fault manager** (code "79:1" in the **"General"** group).
■ The LON subscriber number must be programmed in all control units.
■ The LON subscriber list in the fault manager must be up to date.

Service menu:
1. Press **OK** and ≡: simultaneously for approx. 4 s.
2. **"Service functions"**
3. **"Subscriber check"**

4. Select subscriber (e.g. subscriber 10).
5. Start the subscriber check with **"OK"**.

■ Successfully tested subscribers are identified with **"OK"**.
■ Unsuccessfully tested subscribers are identified with **"Not OK"**.

Note
To perform another subscriber check: Create a new subscriber list with ***"Delete list?"*** *(subscriber list is updated).*

Note
During the subscriber check, the display for the relevant subscriber shows the subscriber no. and ***"Wink"*** *for approx. 1 min.*

Service

Further details regarding the individual steps (cont.)

Scanning and resetting the "Service" display

The red fault indicator flashes when the limits set in coding addresses "21" and "23" have been reached. (Coding address in group **"Boiler"** (weather-compensated control unit) or group 2 (constant temperature control unit).)

Weather-compensated control unit	Constant temperature control unit
Display	
"Service" and **" 🔧 "**	The specified hours run or the specified interval with calendar symbol **" 📅 "** (subject to setting) and **" 🔧 "**
Acknowledging a service	
Press **OK**.	Press **OK**.
Service the appliance.	Service the appliance.
Note	*Note*
An acknowledged service message that was not reset appears again the following Monday.	*An acknowledged service message that was not reset appears again after 7 days.*
After the service has been carried out: Reset the codes	
Service menu:	Reset code "24:1" in group 2 to "24:0".
1. Press **OK** and ☰ simultaneously for approx. 4 s.	
2. **"Service functions"**	*Note*
3. **"Service reset"**	*The selected service parameters for hours run and interval restart at **"0"**.*
Note	
*The selected service parameters for hours run and interval restart at **"0"**.*	

Further details regarding the individual steps (cont.)

Fitting the front panel
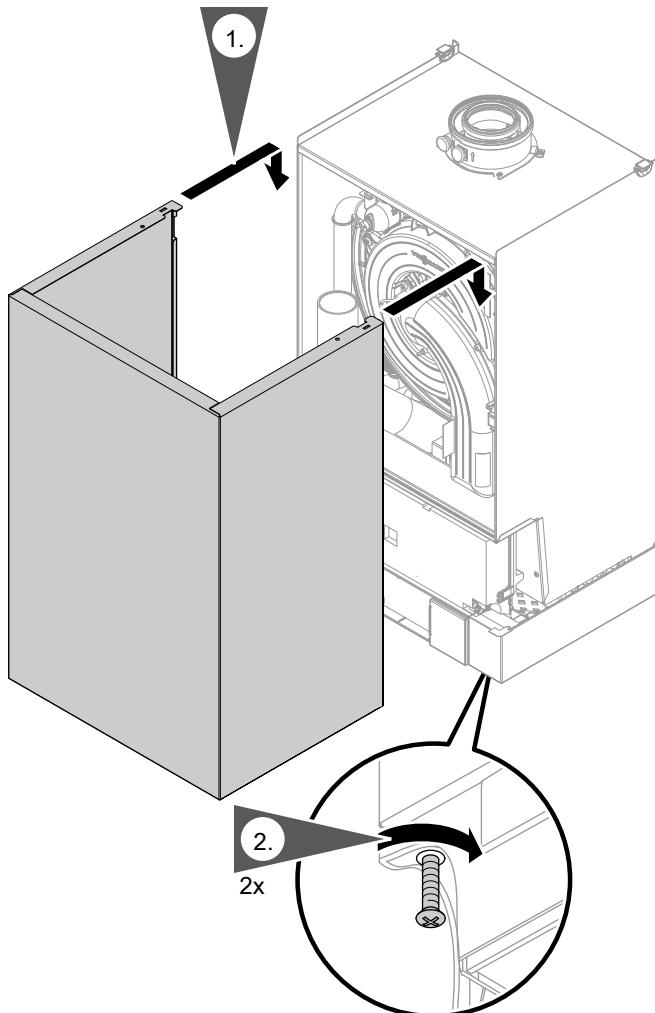
Note
Ensure the locking screws are fitted before operating.

Service

Further details regarding the individual steps (cont.)

Instructing the system user

The system installer should hand the operating instructions to the system user and instruct the user in operating the system.

Calling up coding level 1

Calling up coding level 1

- On weather-compensated control units, codes are displayed as plain text.
- Codes that have not been assigned due to the heating system equipment level or the setting of other codes are not displayed.
- Heating systems with one heating circuit without mixer and one or two heating circuits with mixer:

The heating circuit without mixer is designated **"Heating circuit 1"** and the heating circuits with mixer as **"Heating circuit 2"** or **"Heating circuit 3"**.

If the heating circuits were given individual designations, the selected designation and **"HC1"**, **"HC2"** or **"HC3"** appear instead.

Weather-compensated control unit	Constant temperature control unit
The codes are divided into groups	
■ **"General"**	**1**: **"General"**
■ **"Boiler"**	**2**: **"Boiler"**
■ **"DHW"**	**3**: **"DHW"**
■ **"Solar"**	**4**: **"Solar"**
■ **"Heating circuit 1/2/3"**	**5**: **"Heating circuit 1"**
■ **"All codes std device"**	**6**: **"All codes std device"**
In this group, all coding addresses from coding level 1 (except the coding addresses from the **"Solar"** group) are displayed in ascending order.	In this group, all coding addresses are displayed in ascending order.
■ **"Standard setting"**	**7**: **"Standard setting"**
Call up code 1	
Service menu:	Service menu:
1. Press **OK** and ☰ simultaneously for approx. 4 s.	1. Press **OK** and ☰ simultaneously for approx. 4 s.
2. **"Coding level 1"**	2. Select **"①"** with ▶ for coding level 1 and confirm with **OK**.
3. Select group of required coding address.	3. **"I"** flashes on the display for the coding addresses in group 1.
4. Select coding address.	4. Select the group of required coding address with ▲/▼ and confirm with **OK**.
5. Select value according to the following tables and confirm with **OK**.	5. Select coding address with ▲/▼.
	6. Set value according to the following tables with ▲/▼ and confirm with **OK**.

Service

▶▶

Calling up coding level 1 (cont.)

Weather-compensated control unit	Constant temperature control unit
Resetting all codes to their delivered condition	
Select **"Standard setting"**.	Select **"7"** with ▶ and confirm with **OK**. When **"⊩"** flashes, confirm with **OK**.
Note	
This also resets the codes at coding level 2.	*Note*
	This also resets the codes at coding level 2.

General/group "1"

Select **"General"** for weather-compensated control units (see page 65).

Select **"1"** for constant temperature control unit (see page 65).

Coding

Coding in the delivered condition		Possible change	
System design			
00:1	System version 1: one heating circuit without mixer A1 (heating circuit 1), without DHW heating	00:2 to 00:10	For system schemes, see the following table:

Value address 00: ...	System version	Description
2	1	One heating circuit without mixer A1 (heating circuit 1), with DHW heating (code is set automatically)
3	2,3	One heating circuit with mixer M2 (heating circuit 2), without DHW heating
4	2,3	One heating circuit with mixer (heating circuit 2), with DHW heating
5	2,3	One heating circuit without mixer A1 (heating circuit 1) and one heating circuit with mixer M2 (heating circuit 2), without DHW heating (code is set automatically)
6	2,3	One heating circuit without mixer A1 (heating circuit 1) and one heating circuit with mixer M2 (heating circuit 2), with DHW heating (code is set automatically)

General/group "1" (cont.)

Value address 00: ...	System version	Description
7	4	One heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), without DHW heating
8	4	One heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), with DHW heating
9	4	One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), without DHW heating (code is set automatically)
10	4	One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), with DHW heating (code is set automatically)

Coding in the delivered condition		Possible change	
Internal circulation pump function			
51:0	System with low loss header: internal circulation pump always starts when there is a heat demand	51:1	System with low loss header: when there is a heat demand, the internal circulation pump only starts if the burner is operational. Circulation pump stops on expiry of the run-on time.
		51:2	System with heating water buffer cylinder: when there is a heat demand, the internal circulation pump only starts if the burner is operational.

General/group "1" (cont.)

Coding in the delivered condition		Possible change	
Subscriber no.			
77:1	LON subscriber number (only for weather-compensated control units)	77:2 to 77:99	LON subscriber number, adjustable from 1 to 99: 1 - 4 = Boiler 5 = Cascade 10 - 97 = Vitotronic 200-H 98 = Vitogate 99 = Vitocom **Note** *Allocate each number **only** once.*
Detached house/apartment building			
7F:1	Detached house (only for weather-compensated control units)	7F:0	Apartment building Separate adjustment of holiday program and time program for DHW heating possible.
Lock out controls			
8F:0	Operation in the standard menu and extended menu enabled. **Note** *The respective code is only activated when you exit the service menu.*	8F:1	Operation blocked in standard menu **and** extended menu. Emissions test mode can be enabled.
		8F:2	Operation enabled in the standard menu and blocked in the extended menu. Emissions test mode can be enabled.
Set flow temperature for external demand			
9b:70	Set flow temperature for external demand 70 °C	9b:0 to 9b:127	Set flow temperature for external demand adjustable from 0 to 127 °C (limited by boiler-specific parameters)

Boiler/group "2"

Select **"Boiler"** for weather-compensated control units (see page 65).

Select **"2"** for constant temperature control unit (see page 65).

Coding

Coding in the delivered condition		Possible change	
Single/multi-boiler system			
01:1	Single boiler system (only for constant temperature control units)	01:2	Multi boiler system with Vitotronic 300-K
Boiler number			
07:1	Boiler number in multi boiler systems (only for constant temperature control units)	07:2 to 07:4	Boiler number 2 to 4 in multi boiler systems
Burner service in 100 hours			
21:0	No set service interval (hours run)	21:1 to 21:100	The number of hours run before the burner should be serviced is adjustable from 100 to 10,000 h One step ≙ 100 h
Service interval in months			
23:0	No burner service interval	23:1 to 23:24	Interval adjustable from 1 to 24 months
Service status			
24:0	No **"Service"** indication on the display	24:1	**"Service"** shown in the display. The address is set automatically and must be reset manually after a service.
Filling/Venting			
2F:0	Venting program/fill program disabled	2F:1	Venting program enabled
		2F:2	Fill program enabled

DHW/group "3"

Select **"DHW"** for weather-compensated control unit (see page 65).

Select **"3"** for constant temperature control unit (see page 65).

Service

DHW/group "3" (cont.)

Coding

Coding in the delivered condition		Possible change	
Set DHW temperature reheating suppression			
67:40	For solar DHW heating: set DHW temperature 40 °C. Reheating is suppressed above the selected set temperature: boiler only starts as backup if the rise in the DHW temperature is too low. Cannot be adjusted on gas condensing combi boilers.	67:0 to 67:95	Set DHW temperature adjustable from 0 to 95 °C (limited by boiler-specific parameters)
Enable DHW circulation pump			
73:0	DHW circulation pump: "ON" according to time program (only for weather-compensated control units)	73:1 to 73:6	"ON" from once per hour for 5 min up to 6 times per hour for 5 min during the time program
		73:7	Constantly "ON"

Solar/group "4"

Select **"Solar"** for weather-compensated control unit (see page 65).
Select **"4"** for constant temperature control unit (see page 65).

Note
The solar group is only displayed if a solar control module, type SM1, is connected.

Coding

Coding in the delivered condition		Possible change	
Speed control solar circuit pump			
02:0	Solar circuit pump is not speed-controlled.	02:1	Solar circuit pump is speed-controlled with wave packet control.
		02:2	Solar circuit pump is speed-controlled with PWM control.

Solar/group "4" (cont.)

Coding in the delivered condition		Possible change	
Cylinder maximum temperature			
08:60	Set DHW temperature (maximum cylinder temperature) 60 °C.	08:10 to 08:90	Set DHW temperature adjustable from 10 to 90 °C.
Stagnation time reduction			
0A:5	Temperature differential for stagnation time reduction (reduction in the speed of the solar circuit pump to protect system components and heat transfer medium) 5 K.	0A:0	Stagnation time reduction disabled.
		0A:1 to 0A:40	Temperature differential adjustable from 1 to 40 K.
Flow rate solar circuit			
0F:70	Solar circuit flow rate at the maximum pump speed 7 l/min.	0F:1 to 0F:255	Flow rate adjustable from 0.1 to 25.5 l/min; 1 step ≙ 0.1 l/min.
Extended solar control functions			
20:0	No extended control function enabled.	20:1	Additional function for DHW heating.
		20:2	Differential temperature control 2.
		20:3	Differential temperature control 2 and ausiliary function.
		20:4	Differential temperature control 2 for central heating backup.
		20:5	Thermostat function.
		20:6	Thermostat function and auxiliary function.
		20:7	Solar heating via external heat exchanger without additional temperature sensor.
		20:8	Solar heating via external heat exchanger with additional temperature sensor.
		20:9	Solar heating of two DHW cylinders.

Service

Code 1

Heating circuit 1, heating circuit 2, heating circuit 3/group "5"

Select **"Heating circuit ..."** for weather-compensated control unit (see page 65).

Select **"5"** for constant temperature control unit (see page 65).

Coding

Coding in the delivered condition		Possible change	
Priority DHW heating			
A2:2	Cylinder priority applicable to heating circuit pump and mixer	A2:0	Without cylinder priority applicable to heating circuit pump and mixer
		A2:1	Cylinder priority only applicable to mixer
		A2:3 to A2:15	Reduced priority for mixer: the heating circuit receives a reduced amount of heat.
Economy function, outside temperature			
A5:5	With heating circuit pump logic function (economy control): heating circuit pump "OFF" when the outside temperature (OT) is 1 K higher than the set room temperature (RT_{set}) $OT > RT_{set} + 1 K$ (only for weather-compensated control units)	A5:0	Without heating circuit pump logic function
		A5:1 to A5:15	With heating circuit pump logic function: heating circuit pump "OFF"; see following table

Parameter address A5:...	With heating circuit pump logic function: heating circuit pump "OFF"
1	$OT > RT_{set} + 5 K$
2	$OT > RT_{set} + 4 K$
3	$OT > RT_{set} + 3 K$
4	$OT > RT_{set} + 2 K$
5	$OT > RT_{set} + 1 K$
6	$OT > RT_{set}$
7 to 15	$OT > RT_{set} - 1 K$ $OT > RT_{set} - 9 K$

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Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
Extended economy function adjusted outside temperature			
A6:36	Extended economy control **disabled** (only for weather-compensated control units)	A6:5 to A6:35	Extended economy mode enabled: the burner and heating circuit pump will stop and the mixer will be closed at a variable value, adjustable between 5 and 35 °C plus 1 °C. The base value is the adjusted outside temperature. This value is based on the actual outside temperature and a time constant, which takes the cooling down of an average building into consideration.
Extended economy function, mixer			
A7:0	Without mixer economy function. Only for a weather-compensated control unit and heating circuit with mixer.	A7:1	With mixer economy function (extended heating circuit pump logic): Heating circuit pump also "OFF": ■ If the mixer has been trying to close for longer than 20 min. Heating circuit pump "ON": ■ If the mixer changes to control function ■ If there is a risk of frost
Pump idle time, transition reduced mode			
A9:7	With pump idle time: heating circuit pump "OFF" if the set value is altered through a change in operating mode or through a change in the set room temperature (only for weather-compensated control units)	A9:0	Without pump idle time
		A9:1 to A9:15	With pump idle time, adjustable from 1 to 15. The higher the value, the longer the pump idle time.

Service

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Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
Weather-compensated/room temperature hook-up			
b0:0	With remote control: Heating mode/reduced mode: weather-compensated (only for weather-compensated control units). Change code only for the heating circuit with mixer.	b0:1	Heating mode: weather-compensated Reduced mode: with room temperature hook-up
		b0:2	Heating mode: with room temperature hook-up Reduced mode: weather-compensated
		b0:3	Heating mode/reduced mode: with room temperature hook-up
Economy function room temperature			
b5:0	With remote control: no room temperature-dependent heating circuit pump logic function (only for weather-compensated control units). Change code only for the heating circuit with mixer.	b5:1 to b5:8	For heating circuit pump logic function, see the following table:

Parameter address b5:...	With heating circuit pump logic function:	
	Heating circuit pump "OFF"	**Heating circuit pump "ON"**
1	$RT_{actual} > RT_{set} + 5\ K$	$RT_{actual} < RT_{set} + 4\ K$
2	$RT_{actual} > RT_{set} + 4\ K$	$RT_{actual} < RT_{set} + 3\ K$
3	$RT_{actual} > RT_{set} + 3\ K$	$RT_{actual} < RT_{set} + 2\ K$
4	$RT_{actual} > RT_{set} + 2\ K$	$RT_{actual} < RT_{set} + 1\ K$
5	$RT_{actual} > RT_{set} + 1\ K$	$RT_{actual} < RT_{set}$
6	$RT_{actual} > RT_{set}$	$RT_{actual} < RT_{set} - 1\ K$
7	$RT_{actual} > RT_{set} - 1\ K$	$RT_{actual} < RT_{set} - 2\ K$
8	$RT_{actual} > RT_{set} - 2\ K$	$RT_{actual} < RT_{set} - 3\ K$

Coding in the delivered condition		Possible change	
Min. flow temperature heating circuit			
C5:20	Electronic minimum flow temperature limit 20 °C (only for weather-compensated control units)	C5:1 to C5:127	Minimum limit adjustable from 1 to 127 °C (limited by boiler-specific parameters)

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Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
Max. flow temperature heating circuit			
C6:74	Electronic maximum flow temperature limited to 74 °C (only for weather-compensated control units)	C6:10 to C6:127	Maximum limit adjustable from 10 to 127 °C (limited by boiler-specific parameters)
Heating program changeover			
d5:0	The external operating program changeover switches the operating program to "Constant operation with reduced room temperature" or "Standby mode" (only for weather-compensated control units)	d5:1	The external operating program changeover switches to "Constant operation with standard room temperature" (subject to coding address 3A, 3b and 3C)
Ext. heating program changeover to heating circuit			
d8:0	No operating program changeover via EA1 extension	d8:1	Operating program changeover via input DE1 at EA1 extension
		d8:2	Operating program changeover via input DE2 at EA1 extension
		d8:3	Operating program changeover via input DE3 at EA1 extension
Max. pump speed in standard mode			
E6:...	Maximum speed of the variable speed heating circuit pump in % of the max. speed in standard mode. Value is defaulted by boiler-specific parameters (only for weather-compensated control units).	E6:0 to E6:100	Maximum speed adjustable from 0 to 100 %

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
Min. pump speed			
E7:30	Minimum speed of the variable speed heating circuit pump: 30 % of max. speed (only for weather-compensated control units)	E7:0 to E7:100	Minimum speed adjustable from 0 to 100 % of the maximum speed
Screed function			
F1:0	Screed drying disabled (only for weather-compensated control units).	F1:1 to F1:6	Screed drying adjustable in accordance with 6 selectable temperature/time profiles (see page 154)
		F1:15	Constant flow temperature 20 °C
Party mode time limit			
F2:8	Time limit for party mode or external operating program changeover via key: 8 h (only for weather-compensated control units)[1]	F2:0	No time limit for party mode[1]
		F2:1 to F2:12	Time limit adjustable from 1 to 12 h[1]
Pump control in "Only DHW"			
F6:25	In the "Only DHW" operating mode, the circulation pump in the heating circuit connection set is constantly on (only for constant temperature control units)	F6:0	In the "Only DHW" operating mode, the circulation pump in the heating circuit connection set is constantly off
		F6:1 to F6:24	In the "Only DHW" operating mode, the circulation pump in the heating circuit connection set is started 1 to 24 times per day for 10 min each time.

[1] *In the "Heating and DHW" program, party mode ends **automatically** when the system changes over to operation with standard room temperature.*

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
Pump control in "standby mode"			
F7:25	In "Standby mode", the circulation pump in the heating circuit connection set is constantly on (only for constant temperature control units)	F7:0	In "Standby mode", the circulation pump in the heating circuit connection set is constantly off
		F7:1 to F7:24	In "Standby mode", the circulation pump in the heating circuit connection set is started 1 to 24 times per day for 10 min each time.
Start temperature raising			
F8:-5	Temperature limit for terminating reduced mode -5 °C, see example on page 157. Observe the setting of coding address "A3". (only for weather-compensated control units)	F8:+10 to F8:-60	Temperature limit adjustable from +10 to -60 °C
		F8:-61	Function disabled
End temperature raising			
F9:-14	Temperature limit for raising the reduced set room temperature -14 ºC, see example on page 157. (only for weather-compensated control units)	F9:+10 to F9:-60	Temperature limit for raising the set room temperature to the value selected for standard mode adjustable from +10 to -60 °C
Set flow temperature increase			
FA:20	Raising the set boiler water or flow temperature by 20 % when changing from operation with reduced room temperature to operation with standard room temperature. See example on page 158 (only for weather-compensated control units).	FA:0 to FA:50	Temperature rise adjustable from 0 to 50 %

Service

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Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
Duration set flow temperature increase			
Fb:60	Duration for raising the set boiler water temperature or set flow temperature (see coding address "FA") 60 min. See example on page 158 (only for weather-compensated control units).	Fb:0 to Fb:240	Duration adjustable from 0 to 240 min

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Calling up coding level 2

Calling up coding level 2

- **All** codes are accessible in coding level 2.
- Codes that have not been assigned due to the heating system equipment level or the setting of other codes are not displayed.
- The heating circuit without mixer is designated **"Heating circuit 1"** and the heating circuits with mixer as **"Heating circuit 2"** or **"Heating circuit 3"**.

If the heating circuits were given individual designations, the selected designation and **"HC1"**, **"HC2"** or **"HC3"** appear instead.

Weather-compensated control unit	Constant temperature control unit
The codes are divided into groups	
■ **"General"**	**1**: **"General"**
■ **"Boiler"**	**2**: **"Boiler"**
■ **"DHW"**	**3**: **"DHW"**
■ **"Solar"**	**4**: **"Solar"**
■ **"Heating circuit 1/2/3"**	**5**: **"Heating circuit 1"**
■ **"All codes std device"**	**6**: **"All codes std device"**
In this group, all coding addresses (except the coding addresses from the **"Solar"** group) are displayed in ascending order.	In this group, all coding addresses are displayed in ascending order.
	7: **"Standard setting"**
■ **"Standard setting"**	
Call up code 2	
Service menu:	Service menu:
1. Press **OK** and ☰ simultaneously for approx. 4 s.	1. Press **OK** and ☰ simultaneously for approx. 4 s.
2. Press **OK** and ⮌ simultaneously for approx. 4 s.	2. Press **OK** and ⮌ simultaneously for approx. 4 s.
3. **"Coding level 2"**	3. Select **"②"** with ▶ for coding level 2 and confirm with **OK**.
4. Select group of required coding address.	4. **"I"** flashes on the display for the coding addresses in group 1.
5. Select coding address.	5. Select the group of required coding address with ▲/▼ and confirm with **OK**.
6. Select value according to the following tables and confirm with **OK**.	6. Select coding address with ▲/▼.
	7. Set value according to the following tables with ▲/▼ and confirm with **OK**.

Calling up coding level 2 (cont.)

Weather-compensated control unit	Constant temperature control unit
Resetting all codes to their delivered condition	
Select **"Standard setting"**.	Select **"7"** with ▶ and confirm with **OK**. When **"⊁"** flashes, confirm with **OK**.
Note *This also resets codes at coding level 1.*	*Note* *This also resets codes at coding level 1.*

General/group "1"

Select **"General"** for weather-compensated control units (see page 79).

Select **"1"** for constant temperature control unit (see page 79).

Coding

Coding in the delivered condition		Possible change	
00:1	System version 1: one heating circuit without mixer A1 (heating circuit 1), without DHW heating	00:2 to 00:10	For system schemes, see the following table:

Value address 00: ...	System version	Description
2	1	One heating circuit without mixer A1 (heating circuit 1), with DHW heating (code is set automatically)
3	2,3	One heating circuit with mixer M2 (heating circuit 2), without DHW heating
4	2,3	One heating circuit with mixer (heating circuit 2), with DHW heating
5	2,3	One heating circuit without mixer A1 (heating circuit 1) and one heating circuit with mixer M2 (heating circuit 2), without DHW heating (code is set automatically)
6	2,3	One heating circuit without mixer A1 (heating circuit 1) and one heating circuit with mixer M2 (heating circuit 2), with DHW heating (code is set automatically)

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General/group "1" (cont.)

Value address 00: ...	System version	Description
7	4	One heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), without DHW heating
8	4	One heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), with DHW heating
9	4	One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), without DHW heating (code is set automatically)
10	4	One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), with DHW heating (code is set automatically)

Coding in the delivered condition		Possible change	
11:≠9	No access to the coding addresses for the combustion controller parameters	11:9	Access open to the coding addresses for the combustion controller parameters
25:0	Without outside temperature sensor (for constant temperature control units)	25:1	With outside temperature sensor (automatic recognition)
2A:0	Without wireless outside temperature sensor	2A:1	With wireless outside temperature sensor (automatic recognition)
		2A:2	Wireless outside temperature sensor not used
2d:0	Never adjust		
32:0	Without AM1 extension	32:1	With AM1 extension (automatic recognition)
33:1	Function output A1 at AM1 extension: heating circulation pump	33:0	Function output A1: DHW circulation pump
		33:2	Function output A1: circulation pump for cylinder heating

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General/group "1" (cont.)

Coding in the delivered condition		Possible change	
34:0	Function output A2 at extension AM1: DHW circulation pump	34:1	Function output A2: heating circulation pump
		34:2	Function output A2: circulation pump for cylinder heating
35:0	Without EA1 extension	35:1	With extension EA1 (automatic recognition)
36:0	Function output 157 at extension EA1: fault message	36:1	Function output 157: feed pump **Note** *Function only possible in conjunction with a heating circuit control unit connected via LON.*
		36:2	Function output 157: DHW circulation pump
39:2	Function output 21: circulation pump for cylinder heating	39:0	Function output 21: DHW circulation pump
		39:1	Function output 21: heating circulation pump
3A:0	Function input DE1 at EA1 extension: no function	3A:1	Function input DE1: heating program changeover
		3A:2	Function input DE1: external demand with set flow temperature Flow temperature setting: coding address 9b Internal circulation pump function: coding address 3F
		3A:3	Function input DE1: external blocking Internal circulation pump function: coding address 3E
		3A:4	Function input DE1: external blocking with fault message input

General/group "1" (cont.)

Coding in the delivered condition		Possible change	
			Internal circulation pump function: coding address 3E
		3A:5	Function input DE1: fault message input
		3A:6	Function input DE1: brief operation, DHW circulation pump (pushbutton function). DHW circulation pump run-time adjustment: coding address 3d
3b:0	Function input DE2 at EA1 extension: no function	3b:1	Function input DE2: heating program changeover
		3b:2	Function input DE2: external demand with set flow temperature Flow temperature setting: coding address 9b Internal circulation pump function: coding address 3F
		3b:3	Function input DE2: external blocking Internal circulation pump function: coding address 3E
		3b:4	Function input DE2: external blocking with fault message input Internal circulation pump function: coding address 3E
		3b:5	Function input DE2: fault message input
		3b:6	Function input DE2: brief operation, DHW circulation pump (pushbutton function).

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General/group "1" (cont.)

Coding in the delivered condition		Possible change	
			DHW circulation pump runtime adjustment: coding address 3d
3C:0	Function input DE3 at EA1 extension: no function	3C:1	Function input DE3: heating program changeover
		3C:2	Function input DE3: external demand with set flow temperature Flow temperature setting: coding address 9b Internal circulation pump function: coding address 3F
		3C:3	Function input DE3: external blocking Internal circulation pump function: coding address 3E
		3C:4	Function input DE3: external blocking with fault message input Internal circulation pump function: coding address 3E
		3C:5	Function input DE3: fault message input
		3C:6	Function input DE3: brief operation, DHW circulation pump (pushbutton function). DHW circulation pump runtime adjustment: coding address 3d
3d:5	DHW circulation pump runtime for brief operation: 5 min	3d:1 to 3d:60	DHW circulation pump runtime adjustable from 1 to 60 min
3E:0	Boiler circuit pump stays in control mode on "External blocking" signal	3E:1	Boiler circuit pump is stopped on "External blocking" signal

General/group "1" (cont.)

Coding in the delivered condition		Possible change	
		3E:2	Boiler circuit pump is started on "External blocking" signal
3F:0	Boiler circuit pump stays in control mode on "External demand" signal	3F:1	Boiler circuit pump is stopped on "External demand" signal
		3F:2	Boiler circuit pump is started on "External demand" signal
4b:0	Function input 96: Room thermostat (Vitotrol 100, only for constant temperature control units)	4b:1	External demand
		4b:2	External blocking
51:0	System with low loss header: boiler circuit pump is always started when there is a heat demand	51:1	System with low loss header: when there is heat demand, the boiler circuit pump will only be started if the burner is running. Circulation pump stops on expiry of the run-on time.
		51:2	System with heating water buffer cylinder: when there is heat demand, the boiler circuit pump will only be started if the burner is running.
52:0	Without flow temperature sensor for low loss header	52:1	With flow temperature sensor for low loss header (automatic recognition)
53:1	Function terminal 28 of the internal extension: DHW circulation pump	53:0	Function terminal 28: central fault message
		53:2	Function terminal 28: external heating circuit pump (heating circuit 1)
		53:3	Function terminal 28: external circulation pump for cylinder heating
54:0	Without solar thermal system	54:1	With Vitosolic 100 (automatic recognition)

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General/group "1" (cont.)

Coding in the delivered condition		Possible change	
		54:2	With Vitosolic 200 (automatic recognition)
		54:4	With solar control module SM1 with auxiliary function, e.g. central heating backup (automatic recognition)
6E:50	No measured outside temperature correction	6E:0 to 6E:100	Outside temperature correction in 0.1 K steps. 0 to 49 = -5 K to -0.1 K 51 to 100 = 0.1 K to 5 K
76:0	Without communication module	76:1	With LON communication module (automatic recognition). Only for weather-compensated control units.
		76:2	With cascade communication module (automatic recognition). Only for constant temperature control units.
77:1	LON subscriber number (only for weather-compensated control units)	77:2 to 77:99	LON subscriber number, adjustable from 1 to 99: 1 - 4 = Boiler 5 = Cascade 10 - 97 = Vitotronic 200-H 98 = Vitogate 99 = Vitocom **Note** *Allocate each number **only** once.*
79:1	With LON communication module: control unit is fault manager (only for weather-compensated control units).	79:0	Control unit is not fault manager
7b:1	With LON communication module: control unit transmits the time (only for weather-compensated control units).	7b:0	Does not transmit time

General/group "1" (cont.)

Coding in the delivered condition		Possible change	
7F:1	Detached house (only for weather-compensated control units)	7F:0	Apartment building Separate adjustment of holiday program and time program for DHW heating possible.
80:6	If a fault occurs for at least 30 s, a fault message is displayed	80:0	Immediate fault message
		80:2 to 80:199	The minimum fault duration until a fault message is issued is adjustable from 10 to 995 s 1 step ≙ 5 s
81:1	Automatic summer/wintertime changeover	81:0	Manual summer/wintertime changeover
		81:2	Use of the radio clock receiver (automatic recognition)
		81:3	With LON communication module: control unit receives the time
82:0	Operation with natural gas	82:1	Operation with LPG (only adjustable if coding address 11:9 has been set)
88:0	Temperature displayed in °C (Celsius)	88:1	Temperature displayed in °F (Fahrenheit)
8A:175	Never adjust		
8F:0	Operation in the standard menu and extended menu enabled. **Note** *The respective code is only activated when you exit the service menu.*	8F:1	Operation blocked in standard menu **and** extended menu Emissions test mode can be enabled.
		8F:2	Operation enabled in the standard menu and blocked in the extended menu Emissions test mode can be enabled.

General/group "1" (cont.)

Coding in the delivered condition		Possible change	
90:128	Time constant for calcu-lating adjusted outside temperature 21.3 h	90:1 to 90:199	Fast (low values) or slow (high values) matching of the flow temperature, sub-ject to the set value when the outside temperature changes 1 step ≙ 10 min
94:0	Without OpenTherm ex-tension	94:1	With OpenTherm exten-sion (automatic recogni-tion)
95:0	Without Vitocom 100, type GSM communica-tion interface	95:1	With Vitocom 100, type GSM communication interface (automatic recog-nition)
97:0	With LON communication module: the outside tem-perature of the sensor connected to the control unit is utilised internally (only for weather-com-pensated control units)	97:1	Control unit receives out-side temperature
		97:2	The control unit transmits the outside temperature to the Vitotronic 200-H
98:1	Viessmann system num-ber In conjunction with moni-toring several systems via Vitocom 300	98:1 to 98:5	System number adjustable from 1 to 5
99:0	Never adjust		
9A:0	Never adjust		
9b:70	Set flow temperature for external demand 70 °C	9b:0 to 9b:127	Set flow temperature for external demand adjusta-ble from 0 to 127 °C (limited by boiler-specific parame-ters)
9C:20	Monitoring LON subscrib-ers	9C:0	No monitoring
		9C:5 to	Time adjustable from 5 to 60 min

General/group "1" (cont.)

Coding in the delivered condition		Possible change	
	The values specified inside the control unit are used if there is no response from a subscriber after 20 min. Only then will a fault message be issued. (Only for weather-compensated control units)	9C:60	
9F:8	Differential temperature 8 K Only in conjunction with the mixer circuit (only for weather-compensated control units)	9F:0 to 9F:40	Differential temperature adjustable from 0 to 40 K

Boiler/group "2"

Select **"Boiler"** for weather-compensated control units (see page 79).

Select **"2"** for constant temperature control unit (see page 79).

Coding

Coding in the delivered condition		Possible change	
01:1	Single boiler system (only for constant temperature control units)	01:2	Multi boiler system with Vitotronic 300-K
04:1	Minimum burner pause time subject to the boiler load (specified by coding card)	04:0	Minimum burner pause time set permanently (specified by coding card)
06:...	Maximum limit of the boiler water temperature, specified in °C by the coding card	06:20 to 06:127	Maximum limit of the boiler water temperature within the ranges specified by the boiler
07:1	Boiler number in multi boiler systems (only for constant temperature control units)	07:2 to 07:4	Boiler number 2 to 4 in multi boiler systems

Service

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Boiler/group "2" (cont.)

Coding in the delivered condition		Possible change	
08:...	Maximum burner heating output in kW in the case of a multi boiler system	08:0 to 08:199	Maximum burner heating output adjustable from 0 to 199 kW (limited by boiler-specific parameters) in steps of 1 kW
0d:0	Never adjust		
0E:0	Never adjust		
13:1	Never adjust		
14:1	Never adjust		
15:1	Never adjust		
21:0	No set service interval (hours run)	21:1 to 21:100	The number of hours run before the burner should be serviced is adjustable from 100 to 10,000 h One step ≙ 100 h
23:0	No burner service interval	23:1 to 23:24	Interval adjustable from 1 to 24 months
24:0	No **"Service"** indication on the display	24:1	**"Service"** shown in the display The address is set automatically and must be reset manually after a service.
28:0	No burner interval ignition	28:1 to 28:24	Time interval adjustable from 1 to 24 h. The burner is force-started for 30 s at a time (only when operating with LPG).
2E:0	Never adjust		
2F:0	Venting program/fill program disabled	2F:1	Venting program enabled
		2F:2	Fill program enabled
30:3	Boiler circuit pump speed-controlled via 0 - 10 V interface	30:0	Boiler circuit pump multi stage
		30:1	Boiler circuit pump speed-controlled
		30:2	Boiler circuit pump speed-controlled with flow rate

Boiler/group "2" (cont.)

Coding in the delivered condition		Possible change	
31:...	Set speed in % of the internal circulation pump when operated as boiler circuit pump, specified by the coding card	31:0 to 31:100	Set speed adjustable from 0 to 100 %
38:0	Status burner control unit: operational (no fault)	38:≠0	Status burner control unit: fault

DHW/group "3"

Select **"DHW"** for weather-compensated control unit (see page 79).

Select **"3"** for constant temperature control unit (see page 79).

Coding

Coding in the delivered condition		Possible change	
56:0	Set DHW temperature adjustable from 10 to 60 °C	56:1	Set DHW temperature adjustable from 10 to above 60 °C ***Note*** *Maximum value subject to boiler coding card* *Observe the max. permissible DHW temperature.*
58:0	Without auxiliary function for DHW heating	58:10 to 58:60	Entry of a 2nd set DHW temperature Adjustable from 10 to 60 °C (observe coding addresses "56" and "63")
59:0	Cylinder heating: Start point -2.5 K Stop point +2.5 K	59:1 to 59:10	Start point adjustable from 1 to 10 K below set value
5b:0	DHW cylinder directly connected to the boiler	5b:1	DHW cylinder connected downstream of the low loss header

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DHW/group "3" (cont.)

Coding in the delivered condition		Possible change	
5E:0	Circulation pump for cylinder heating stays in control mode at signal "External blocking"	5E:1	Circulation pump for cylinder heating stops at signal "External blocking"
		5E:2	Circulation pump for cylinder heating starts at signal "External blocking"
5F:0	Circulation pump for cylinder heating stays in control mode at signal "External demand"	5F:1	Circulation pump for cylinder heating stops at signal "External demand"
		5F:2	Circulation pump for cylinder heating starts at signal "External demand"
60:20	During DHW heating, the boiler water temperature is max. 20 K higher than the set DHW temperature	60:5 to 60:25	The differential between the boiler water temperature and the set DHW temperature is adjustable from 5 to 25 K
62:2	Circulation pump with 2 min run-on time after cylinder heating	62:0	No circulation pump run-on
		62:1 to 62:15	Run-on time adjustable from 1 to 15 min
63:0	Without auxiliary function for DHW heating (only for constant temperature control units)	63:1	Auxiliary function: 1 x daily
		63:2 to 63:14	Every 2 days to every 14 days
		63:15	2 x daily
65:0	Never adjust		
67:40	For solar DHW heating: set DHW temperature 40 °C. Reheating is suppressed above the selected set temperature: boiler only starts as backup if the rise in the DHW temperature is too low.	67:0 to 67:95	Set DHW temperature adjustable from 0 to 95 °C (limited by boiler-specific parameters)
6F:...	Max. heating output for DHW heating in %, specified by the coding card	6F:0 to 6F:100	Max. heating output for DHW heating adjustable from min. heating output to 100 %

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DHW/group "3" (cont.)

Coding in the delivered condition		Possible change	
71:0	DHW circulation pump: "ON" according to time program (only for weather-compensated control units)	71:1	"OFF" during DHW heating to set value 1
		71:2	"ON" during DHW heating to set value 1
72:0	DHW circulation pump: "ON" according to time program (only for weather-compensated control units)	72:1	"OFF" during DHW heating to set value 2
		72:2	"ON" during DHW heating to set value 2
73:0	DHW circulation pump: "ON" according to time program (only for weather-compensated control units)	73:1 to 73:6	"ON" from once per hour for 5 min up to 6 times per hour for 5 min during the time program
		73:7	Constantly "ON"

Solar/group "4"

Select **"Solar"** for weather-compensated control unit (see page 79).
Select **"4"** for constant temperature control unit (see page 79).

Note
The solar group is only displayed if a solar control module, type SM1, is connected.

Coding

Coding in the delivered condition		Possible change	
00:8	Start temperature differential for solar circuit pump 8 K	00:2 to 00:30	Start temperature differential adjustable from 2 to 30 K
01:4	Stop temperature differential for solar circuit pump 4 K	01:1 to 01:29	Stop temperature differential adjustable from 1 to 29 K
02:0	Solar circuit pump not speed-controlled	02:1	Variable speed solar circuit pump with wave packet control
		02:2	Solar circuit pump speed-controlled with PWM control

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Solar/group "4" (cont.)

Coding in the delivered condition		Possible change	
03:10	Temperature differential for the start of speed control 10 K	03:5 to 03:20	Temperature differential adjustable from 5 to 20 K
04:4	Controller amplification of the speed control 4 %/K	04:1 to 04:10	Controller amplification adjustable from 1 to 10 %/K
05:10	Minimum solar circuit pump speed 10 % of maximum speed	05:2 to 05:100	Min. speed of the solar circuit pump is adjustable from 2 to 100 %
06:75	Maximum speed of the solar circuit pump 75 % of the maximum possible speed	06:1 to 06:100	Maximum speed of the solar circuit pump is adjustable from 1 to 100 %
07:0	Solar circuit pump interval function OFF	07:1	Solar circuit pump interval function ON The solar circuit pump starts for short cycles to capture the collector temperature more accurately.
08:60	Set DHW temperature (maximum cylinder temperature) 60 °C	08:10 to 08:90	Set DHW temperature adjustable from 10 to 90 °C
09:130	Maximum collector temperature (to protect system components) 130 °C	09:20 to 09:200	Temperature adjustable from 20 to 200 °C
0A:5	Temperature differential for stagnation time reduction 5 K Reduction in the speed of the solar circuit pump to protect system components and heat transfer medium.	0A:0	Stagnation time reduction is disabled
		0A:1 to 0A:40	Temperature differential adjustable from 1 to 40 K
0b:0	Frost protection function for solar circuit OFF	0b:1	Frost protection function for solar circuit switched on (not required with Viessmann heat transfer medium).
0C:1	Delta-T monitoring ON	0C:0	Delta-T monitoring OFF

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Solar/group "4" (cont.)

Coding in the delivered condition		Possible change	
	No flow rate captured in the solar circuit, or flow rate too low.		
0d:1	Night circulation monitoring ON Unintentional flow in the solar circuit is captured (e.g. at night).	0d:0	Night circulation monitoring OFF
0E:1	Heat statement in conjunction with Viessmann heat transfer medium	0E:2	Never adjust
		0E:0	No heat statement
0F:70	Solar circuit flow rate at maximum pump speed 7 l/min	0F:1 to 0F:255	Flow rate adjustable from 0.1 to 25.5 l/min 1 step $\triangleq$ 0.1 l/min
10:0	Target temperature control switched off (see coding address "11").	10:1	Target temperature control ON
11:50	Set solar DHW temperature 50 °C. ■ Target temperature control ON (code "10:1"): temperature at which the solar heated water in the DHW cylinder is to be stratified. ■ Code "20:9" (heating of two DHW cylinders) is set: when one DHW cylinder reaches its set DHW temperature, the second DHW cylinder is heated.	11:10 to 11:90	The set solar DHW temperature is adjustable from 10 to 90 °C.
12:10	Minimum collector temperature (minimum solar circuit pump start temperature) 10 °C	12:0	No minimum limit enabled
		12:1 to 12:90	Minimum collector temperature adjustable from 1 to 90 °C
20:0	No extended control functions enabled	20:1	Auxiliary function for DHW heating

Service

Solar/group "4" (cont.)

Coding in the delivered condition		Possible change	
		20:2	Differential temperature control 2
		20:3	Differential temperature control 2 and auxiliary function
		20:4	Differential temperature control 2 for central heating backup
		20:5	Thermostat function
		20:6	Thermostat function and auxiliary function
		20:7	Solar heating via external heat exchanger without additional temperature sensor
		20:8	Solar heating via external heat exchanger with additional temperature sensor
		20:9	Solar heating of 2 DHW cylinders
22:8	Start temperature differential with central heating backup 8 K (code "20:4" must be set)	22:2 to 22:30	Start temperature differential adjustable from 2 to 30 K
23:4	Stop temperature differential with central heating backup 4 K (code "20:4" must be set)	23:2 to 23:30	Stop temperature differential adjustable from 1 to 29 K
24:40	Start temperature for thermostat function 40 °C (code "20:5" or "20:6" must be set)	24:0 to 24:100	Start temperature for thermostat function adjustable from 0 to 100 K
25:50	Stop temperature differential for thermostat function 50 °C (code "20:5" or "20:6" must be set)	25:0 to 25:100	Stop temperature for thermostat function adjustable from 0 to 100 K
26:1	Priority for DHW cylinder 1 **with** cyclical heating (code "20:9" must be set)	26:0	Priority for DHW cylinder 1 **without** cyclical heating
		26:2	Priority for DHW cylinder 2 **without** cyclical heating

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Solar/group "4" (cont.)

Coding in the delivered condition		Possible change	
		26:3	Priority for DHW cylinder 2 **with** cyclical heating
		26:4	Cyclical heating without priority for one of the DHW cylinders
27:15	Cyclical heating time 15 min. The DHW cylinder without priority is heated at most for the duration of the set cyclical heating time if the DHW cylinder with priority is heated up.	27:5 to 27:60	The cyclical heating time is adjustable from 5 to 60 min.
28:3	Cyclical pause time 3 min. After the selected cyclical heating time for the DHW cylinder without priority has expired, the rise in collector temperature is captured during the cyclical pause time.	28:1 to 28:60	Cyclical pause time adjustable from 1 to 60 min.

Heating circuit 1, heating circuit 2, heating circuit 3/group "5"

Select **"Heating circuit ..."** for weather-compensated control unit (see page 79).

Select **"5"** for constant temperature control unit (see page 79).

Coding

Coding in the delivered condition		Possible change	
A0:0	Without remote control	A0:1	With Vitotrol 200A/200 RF (automatic recognition)
		A0:2	With Vitotrol 300A/300 RF or Vitocomfort 200 (automatic recognition)

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Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
A1:0	All possible settings at the remote control can be accessed	A1:1	Only party mode can be set at the remote control (only for Vitotrol 200 RF)
A2:2	Cylinder priority applicable to heating circuit pump and mixer	A2:0	Without cylinder priority applicable to heating circuit pump and mixer
		A2:1	Cylinder priority only applicable to mixer
		A2:3 to A2:15	Reduced priority for mixer The heating circuit receives a reduced amount of heat
A3:2	Outside temperature below 1 °C: heating circuit pump "ON" Outside temperature above 3 °C: heating circuit pump "OFF"	A3:-9 to A3:15	Heating circuit pump "ON/OFF" (see the following table)

! **Please note**
If a value below 1 °C is selected, there is a risk that pipes outside the thermal envelope of the house could freeze up.
Standby mode in particular should be taken into consideration, e.g. during holidays.

Parameter Address A3:...	Heating circulation pump "ON"	"OFF"
-9	-10 °C	-8 °C
-8	-9 °C	-7 °C
-7	-8 °C	-6 °C
-6	-7 °C	-5 °C
-5	-6 °C	-4 °C
-4	-5 °C	-3 °C
-3	-4 °C	-2 °C
-2	-3 °C	-1 °C
-1	-2 °C	0 °C
0	-1 °C	1 °C
1	0 °C	2 °C
2 to 15	1 °C to 14 °C	3 °C to 16 °C

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Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
A4:0	With frost protection (only for weather-compensa-ted control units)	A4:1	No frost protection; this set-ting is only possible if code "A3:-9" has been selected. ***Note*** *"Important" observe for code "A3".*
A5:5	With heating circuit pump logic function (economy control): heating circuit pump "OFF" when the outside temperature (OT) is 1 K higher than the set room temperature (RT_{set}) $OT > RT_{set} + 1\,K$ (only for weather-compensated control units)	A5:0	Without heating circuit pump logic function
		A5:1 to A5:15	With heating circuit pump logic function: heating cir-cuit pump "OFF"; see fol-lowing table

Parameter address A5:...	With heating circuit pump logic function: heating cir-cuit pump "OFF"
1	$OT > RT_{set} + 5\,K$
2	$OT > RT_{set} + 4\,K$
3	$OT > RT_{set} + 3\,K$
4	$OT > RT_{set} + 2\,K$
5	$OT > RT_{set} + 1\,K$
6	$OT > RT_{set}$
7 to 15	$OT > RT_{set} - 1\,K$ $OT > RT_{set} - 9\,K$

Coding in the delivered condition		Possible change	
A6:36	Extended economy con-trol **disabled** (only for weather-compensated control units)	A6:5 to A6:35	Extended economy mode enabled

Service

Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
			The burner and heating circuit pump will stop and the mixer will be closed at a variable value, adjustable between 5 and 35 °C plus 1 °C. The base value is the adjusted outside temperature. This value is based on the actual outside temperature and a time constant, which takes the cooling down of an average building into consideration.
A7:0	Without mixer economy function Only for a weather-compensated control unit and heating circuit with mixer	A7:1	With mixer economy function (extended heating circuit pump logic): Heating circuit pump also "OFF": ■ If the mixer has been trying to close for longer than 20 min. Heating circuit pump "ON": ■ If the mixer changes to control function ■ If there is a risk of frost
A8:1	Heating circuit with mixer creates a demand for the boiler circuit pump (only for weather-compensated control units)	A8:0	Heating circuit with mixer creates no demand for the boiler circuit pump
A9:7	With pump idle time: heating circuit pump "OFF" if the set value is altered through a change in operating mode or through a change in the set room temperature (only for weather-compensated control units)	A9:0	Without pump idle time
		A9:1 to A9:15	With pump idle time, adjustable from 1 to 15. The higher the value, the longer the pump idle time.

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Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
b0:0	With remote control: Heating mode/reduced mode: weather-compensated (only for weather-compensated control units; change the code only for the heating circuit with mixer)	b0:1	Heating mode: weather-compensated Reduced mode: with room temperature hook-up
		b0:2	Heating mode: with room temperature hook-up Reduced mode: weather-compensated
		b0:3	Heating mode/reduced mode: with room temperature hook-up
b2:8	With remote control and for the heating circuit, operation with room temperature hook-up must be programmed: room influence factor 8 (only for weather-compensated control units; only change the code for the heating circuit with mixer)	b2:0	Without room influence
		b2:1 to b2:64	Room influence factor adjustable from 1 to 64. The higher the value, the greater the room influence.
b5:0	With remote control: no room temperature-dependent heating circuit pump logic function (only for weather-compensated control units; only change the code for the heating circuit with mixer)	b5:1 to b5:8	For heating circuit pump logic function, see the following table:

Parameter address b5:...	With heating circuit pump logic function:	
	Heating circuit pump "OFF"	Heating circuit pump "ON"
1	$RT_{actual} > RT_{set} + 5\ K$	$RT_{actual} < RT_{set} + 4\ K$
2	$RT_{actual} > RT_{set} + 4\ K$	$RT_{actual} < RT_{set} + 3\ K$
3	$RT_{actual} > RT_{set} + 3\ K$	$RT_{actual} < RT_{set} + 2\ K$
4	$RT_{actual} > RT_{set} + 2\ K$	$RT_{actual} < RT_{set} + 1\ K$
5	$RT_{actual} > RT_{set} + 1\ K$	$RT_{actual} < RT_{set}$
6	$RT_{actual} > RT_{set}$	$RT_{actual} < RT_{set} - 1\ K$

Service

Heating circuit 1, heating circuit 2, heating… (cont.)

Parameter address b5:...	With heating circuit pump logic function: Heating circuit pump "OFF"	Heating circuit pump "ON"
7	$RT_{actual} > RT_{set}$ - 1 K	$RT_{actual} < RT_{set}$ - 2 K
8	$RT_{actual} > RT_{set}$ - 2 K	$RT_{actual} < RT_{set}$ - 3 K

Coding in the delivered condition		Possible change	
C5:20	Electronic minimum flow temperature limit 20 °C (only for weather-compensated control units)	C5:1 to C5:127	Minimum limit adjustable from 1 to 127 °C (limited by boiler-specific parameters)
C6:74	Electronic maximum flow temperature limited to 74 °C (only for weather-compensated control units)	C6:10 to C6:127	Maximum limit adjustable from 10 to 127 °C (limited by boiler-specific parameters)
d3:14	Heating curve slope = 1.4	d3:2 to d3:35	Heating curve slope adjustable from 0.2 to 3.5 (see page 57)
d4:0	Heating curve level = 0	d4:–13 to d4:40	Heating curve level adjustable from –13 to 40 (see page 57)
d5:0	The external operating program changeover switches the operating program to "Constant operation with reduced room temperature" or "Standby mode" (only for weather-compensated control units)	d5:1	The external operating program changeover switches to "Constant operation with standard room temperature" (subject to coding address 3A, 3b and 3C)
d6:0	Heating circuit pump stays in control mode at signal "External blocking"	d6:1	Heating circuit pump stops at signal "External blocking" (subject to coding addresses 3A, 3b and 3C)
		d6:2	Heating circuit pump starts at signal "External blocking" (subject to coding addresses 3A, 3b and 3C)

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Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
d7:0	Heating circuit pump stays in control mode at signal "External de-mand"	d7:1	Heating circuit pump stops at signal "External de-mand" (subject to coding addresses 3A, 3b and 3C)
		d7:2	Heating circuit pump stops at signal "External de-mand" (subject to coding addresses 3A, 3b and 3C)
d8:0	No operating program changeover via EA1 ex-tension	d8:1	Operating program changeover via input DE1 at EA1 extension
		d8:2	Operating program changeover via input DE2 at EA1 extension
		d8:3	Operating program changeover via input DE3 at EA1 extension
E1:1	Never adjust		
E2:50	With remote control: No display correction for the actual room temperature (only for weather-compensated control units)	E2:0 to E2:49	Display correction –5 K to Display correction –0.1 K
		E2:51 to E2:99	Display correction +0.1 K to Display correction +4.9 K
E5:0	Never adjust		
F1:0	Screed drying disabled (only for weather-compensated control units)	F1:1 to F1:6	Screed drying adjustable in accordance with 6 selecta-ble temperature/time pro-files (see page 154)
		F1:15	Constant flow temperature 20 °C
F2:8	Time limit for party mode or external operating pro-gram changeover via key: 8 h (only for weather-compensated control units)[*1]	F2:0	No time limit for party mode[*1]
		F2:1 to F2:12	Time limit adjustable from 1 to 12 h[*1]

Service

▶▶

[*1] *In the "Heating and DHW" program, party mode ends **automatically** when the system changes over to operation with standard room temperature.*

Code 2

Heating circuit 1, heating circuit 2, heating… (cont.)

| Coding in the delivered condition		Possible change	
F5:12	Boiler circuit pump run-on time in heating mode: 12 min (only for constant temperature control units)	F5:0	No boiler circuit pump run-on time
		F5:1 to F5:20	Run-on time of the boiler circuit pump adjustable from 1 to 20 min
F6:25	In "Only DHW" operating mode, the boiler circuit pump is constantly on (only for constant temperature control units)	F6:0	In "Only DHW" mode, the boiler circuit pump is constantly off
		F6:1 to F6:24	In "Only DHW" mode, the boiler circuit pump is started 1 to 24 times per day for 10 min each time.
F7:25	In "Standby mode", the boiler circuit pump is constantly on (only for constant temperature control units)	F7:0	In "Standby mode", the boiler circuit pump is constantly off
		F7:1 to F7:24	In "Standby mode", the boiler circuit pump is started 1 to 24 times per day for 10 min each time.
F8:-5	Temperature limit for terminating reduced mode -5 °C, see example on page 157. Observe the setting of coding address "A3". (only for weather-compensated control units)	F8:+10 to F8:-60	Temperature limit adjustable from +10 to -60 °C
		F8:-61	Function disabled
F9:-14	Temperature limit for raising the reduced set room temperature -14 °C, see example on page 157 (only for weather-compensated control units)	F9:+10 to F9:-60	Temperature limit for raising the set room temperature to the value selected for standard mode adjustable from +10 to -60 °C

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Heating circuit 1, heating circuit 2, heating… (cont.)

Coding in the delivered condition		Possible change	
FA:20	Raising the set boiler water or flow temperature by 20 % when changing from operation with reduced room temperature to operation with standard room temperature. See example on page 158 (only for weather-compensated control units).	FA:0 to FA:50	Temperature rise adjustable from 0 to 50 %
Fb:60	Duration for raising the set boiler water temperature or set flow temperature (see coding address "FA") 60 min. See example on page 158 (only for weather-compensated control units).	Fb:0 to Fb:240	Duration adjustable from 0 to 240 min

Service

Service level

Weather-compensated control unit	Constant temperature control unit
Calling up the service level	
Service menu:	Service menu:
1. Press **OK** and ☰⋮ simultaneously for approx. 4 s.	1. Press **OK** and ☰⋮ simultaneously for approx. 4 s.
2. Select required menu. See the following diagram.	**"🔎"** flashes on the display.
	2. Select required function. See the following pages.
Exiting the service level	
Service menu:	Service menu:
1. Select **"Terminate service?"**.	1. Select **"Serv"** ⑦ with ▶.
2. Select **"Yes"**.	2. Confirm with **OK**.
3. Confirm with **OK**.	**"OFF"** flashes.
	3. Confirm with **OK**.
Note	
The system exits the service level automatically after 30 min.	*Note*
	The system exits the service level automatically after 30 min.

Overview of service menu for weather-compensated mode

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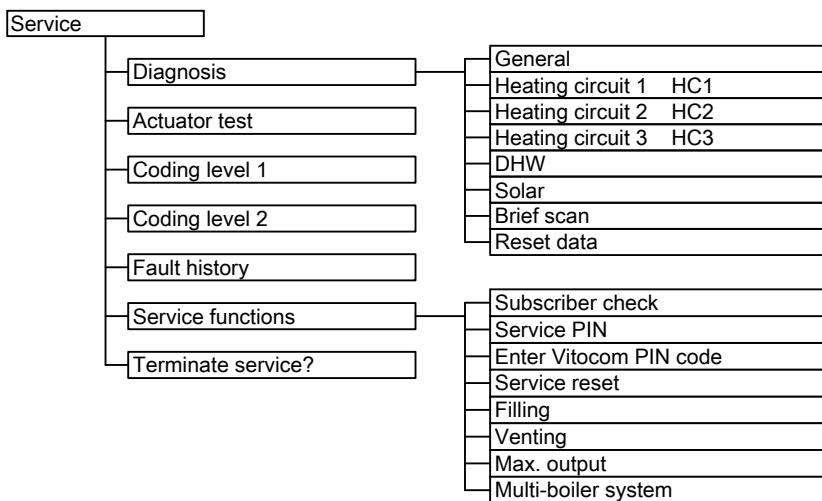
Service level (cont.)

Note
*Do **not** adjust menu item **"Multi-boiler system"**.*

The menu item turns a weather-compensated control unit into a constant temperature control unit.

Diagnosis

Operating data

Weather-compensated control unit	Constant temperature control unit
Calling up operating data	
■ Operating data can be scanned in six areas. See **"Diagnosis"** in the service menu overview. ■ Operating data on heating circuits with mixers and solar can only be called up if the components are installed in the system. ■ For further information on operating data, see chapter "Brief scan".	■ Operating data can be called up in the **"i"** menu. ■ For further information on operating data, see chapter "Brief scan".
Calling up operating data	
Service menu: 1. Press **OK** and ☰ simultaneously for approx. 4 s. 2. **"Diagnosis"** 3. Select required group, e.g. **"General"**. *Note* *"- - -" appears on the display if a sensor that has been scanned is faulty.*	Service menu: 1. Press **OK** and ☰ simultaneously for approx. 4 s. 2. Select required information with ▲/▼. *Note* *"- - -" appears on the display if a sensor that has been scanned is faulty.*

Service

▶▶

Diagnosis (cont.)

Weather-compensated control unit	Constant temperature control unit
Resetting operating data	
Saved operating data (e.g. hours run) can be reset to **"0"**. The value "Adjusted outside temp" is reset to the actual value.	Saved operating data (e.g. hours run) can be reset to **"0"**.
Service menu:	Service menu:
1. Press **OK** and ☰ simultaneously for approx. 4 s.	1. Press **OK** and ☰ simultaneously for approx. 4 s.
2. **"Diagnosis"**	2. Select required information with ▲/▼.
3. **"Reset data"**	3. Confirm with **OK**; "⊬" flashes.
4. Select required value (e.g. **"Burner starts"**) or **"All details"**.	4. Confirm with **OK**; the value is reset.

Brief scan

In the brief scan, you can scan temperatures, software versions and connected components, for example.

Weather-compensated control unit

1. Press **OK** and ☰ simultaneously for approx. 4 s.

2. **"Diagnosis"**

3. **"Brief scan"**

4. Press **OK**.
   The display shows 9 lines with 6 fields each.

```
Diagnosis Brief scan
1:  1  F  0  A  1  2
2:  0  0  0  0  0  0
3:  0  0  0  0  0  0
4:  0  0  0  0  0  0
        Select with ⬍
```

For an explanation of the relevant values in the individual lines and fields, see the following table:

Line (brief scan)	Field					
	1	2	3	4	5	6
1:	System scheme 01 to 10		Software version Control unit		Software version Programming unit	
2:	0	0	Appliance version		Device identification ZE-ID	

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Diagnosis (cont.)

Line (brief scan)	Field					
	1	**2**	**3**	**4**	**5**	**6**
3:	0		Number of KM BUS subscribers		Software version, solar control module SM1	
4:	Software version Burner control unit		Type Burner control unit		Burner control unit version	
5:	Internal details for calibration			0	Software version, extension AM1	Software version, extension EA1
6:	0	0	0	Flow sensor switching state 1: Flow rate too low or not present	0	0
7:	LON Subnet address/system number		LON Node address		0	
8:	LON SBVT configuration	LON Software version communication coprocessor	LON Neuron chip software version		Number of LON subscribers	

Diagnosis (cont.)

Line (brief scan)	Field					
	1	2	3	4	5	6
9:	**Heating circuit A1 (without mixer)**		**Heating circuit M2 (with mixer)**		**Heating circuit M3 (with mixer)**	
	Remote control 0: w/o 1: Vitotrol 200A/ 200 RF 2: Vitotrol 300A/ 300 RF or Vitocomfort	Software version, remote control	Remote control 0: w/o 1: Vitotrol 200A/ 200 RF 2: Vitotrol 300 A/ 300 RF or Vitocomfort	Software version, remote control	Remote control 0: w/o 1: Vitotrol 200A/ 200 RF 2: Vitotrol 300 A/ 300 RF or Vitocomfort	Software version, remote control
10:	0	0	0	0	0	0
11:	0	0	Software version, mixer extension, heating circuit M2 0: No mixer extension	0	Software version, mixer extension, heating circuit M3 0: No mixer extension	0

Constant temperature control unit

1. Press **OK** and ☰: simultaneously for approx. 4 s.
   "🔎" flashes on the display.

2. Confirm with **OK**.

3. Select the required scan with ▲/▼. For example, "b" for "Max. heating output" (see following table):

4. Confirm selected scan with **OK**.

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Diagnosis (cont.)

For explanations of individual scans, see the following table:

Brief scan	Display				
0		System scheme 1 to 2	Software version Control unit		Software version Programming unit
1			Adjusted outside temperature		
3			Set boiler water temperature		
4			Common demand temperature		
5			Set cylinder temperature		
6			Number of KM BUS subscribers	Number of LON subscribers	
7	SNVT configuration 0: Auto 1: Tool	Software version Communications coprocessor		Software version LON communication module	
8		Subnet address/system number		Node address	
9		Burner control unit type		Appliance type	
A		Flow switch switching state 1: Flow rate too low or not present	Max. heating output in %		
b			Coding card (hexadecimal)		
c			Flow rate (specified in l/h)		
C		Version Device		Version Burner control unit	
d				0	0
E ①	Software version Solar control module, type SM1	Software version Burner control unit			Software version LON cascade communication module
F ①	Code 53 setting	Internal details for calibration			
	AM1 extension				

Service

Diagnosis (cont.)

Brief scan	Display				
F ②	Software version	Output A1 configuration (value corresponds to code 33 setting)	Output A1 switching state 0: OFF 1: ON	Output A2 configuration (value corresponds to code 34 setting)	Output A2 switching state 0: OFF 1: ON
	EA1 extension				
F ③	Output 157 configuration (value corresponds to setting of code 36 in group 1 **"General"**)	Output 157 switching state 0: OFF 1: ON	Input DE1 switching state 0: open 1: closed	Input DE2 switching state 0: open 1: closed	Input DE3 switching state 0: open 1: closed
F ④	Software version		External hook-up 0 - 10 V Display in %		
	Solar control module SM1				
F ⑤	Stagnation time of the solar thermal system in h				
F ⑥	Night circulation, solar thermal system (number)				
F ⑦	Differential temperature monitoring				
F ⑧				Solar central heating backup 0: disabled 1: enabled	Output 22 switching state 0: OFF 1: ON
	OpenTherm extension (if installed)				
F ⑨	Software version	DHW heating status	External hook-up 0 - 10 V Display in %		

Checking outputs (relay test)

Weather-compensated control unit

1. Press **OK** and ☰: simultaneously for approx. 4 s.

2. **"Actuator test"**

The following relay outputs can be controlled subject to system design:

Display		Explanation
All actuators	Off	All actuators are off
Base load	On	Burner operated at minimum output; circulation pump is started
Full load	On	Burner operated at maximum output; circulation pump is started
Output, internal	On	Output 20 active (boiler circuit pump)
Output 21/28	On	Output 21 active (circulation pump for cylinder heating)
Heating circ pump HC2	On	Heating circuit pump output enabled (extension to heating circuit with mixer)
Mixer HC2	Open	"Mixer open" output enabled (extension to heating circuit with mixer)
Mixer HC2	Close	"Mixer close" output enabled (extension to heating circuit with mixer)
Heating circ pump HC3	On	Heating circuit pump output enabled (extension to heating circuit with mixer)
Mixer HC3	Open	"Mixer open" output enabled (extension to heating circuit with mixer)
Mixer HC3	Close	"Mixer close" output enabled (extension to heating circuit with mixer)
Outp. int. exten. H1	On	Output at internal extension enabled
AM1 output 1	On	Output A1 at extension AM1 enabled
AM1 output 2	On	Output A2 at extension AM1 enabled
EA1 output 1	On	Contact P - S at plug 157 of extension EA1 closed
Solar circuit pump	On	Solar circuit pump output 24 on solar control module SM1 active
Solar circ pmp min	On	Solar circuit pump output on solar control module SM1 switched to minimum speed
Solar circ pmp max	On	Solar circuit pump output on solar control module SM1 switched to maximum speed
SM1 output 22	On	Output 22 on solar control module SM1 active

Checking outputs (relay test) (cont.)

Constant temperature control unit

1. Press **OK** and ☰ simultaneously for approx. 4 s.
   "🔍" flashes on the display.

2. Select "⊏⊐" with ▶ and confirm with **OK**.

3. Select required actuator (output) with ▲/▼ (see following table):

4. Confirm selected actuator with **OK**. The display shows the number for the activated actuator and "**ON**".

The following actuators (relay outputs) can be controlled subject to system design:

Display	Explanation
0	All actuators are off
1	Burner operated at minimum output; circulation pump is started
2	Burner operated at maximum output; circulation pump is started
3	Output ⟦20⟧ active (boiler circuit pump)
10	Internal extension output enabled
15	Solar circuit pump output ⟦24⟧ on solar control module SM1 active
16	Solar circuit pump output on solar control module SM1 switched to minimum speed
17	Solar circuit pump output on solar control module SM1 switched to maximum speed
18	Output ⟦22⟧ on solar control module SM1 active
19	Contact P - S at plug ⟦157⟧ of extension EA1 closed
20	Output A1 at extension AM1 enabled
21	Output A2 at extension AM1 enabled
22	Output ⟦21⟧ active (circulation pump for cylinder heating)

Fault display

Weather-compensated control unit

In the event of a fault, red fault indicator Ⓐ flashes. **"△"** flashes on the display and **"Fault"** is shown.
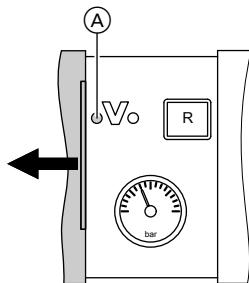
The fault code is displayed with **OK**.
For an explanation of the fault code, see the following pages.
For some faults, the type of fault is also displayed in plain text.

Acknowledging a fault

Follow the instructions on the display.

Note
- *The fault message is transferred to the standard menu.*
- *Any fault message facility, if connected, will be switched off.*
- *If an acknowledged fault is not remedied, the fault message will be re-displayed the following day and the fault message facility restarted.*

Calling up acknowledged faults

Select **"Fault"** in the standard menu. The current faults will be displayed in a list.

Calling up fault codes from the fault memory (fault history)

The 10 most recent faults (including resolved ones) are saved and can be scanned.
Faults are sorted by date.

1. Press **OK** and ≣ simultaneously for approx. 4 s.

2. **"Fault history"**

3. **"Display?"**

Deleting fault history

1. Press **OK** and ≣ simultaneously for approx. 4 s.

2. **"Fault history"**

3. **"Delete?"**

Service

Fault display (cont.)

Constant temperature control unit

In the event of a fault, red fault indicator Ⓐ flashes. The two-digit fault code and (subject to the type of fault) **"△"** or **"♨"** flash on the programming unit display.
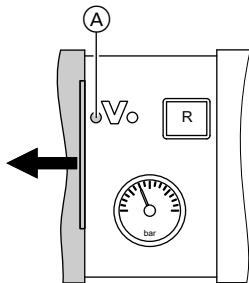
Other current faults can be displayed with ▲/▼. For an explanation of the fault codes, see the following pages.

Example: Fault code "50"

Acknowledge a fault

Press **OK**; the standard display is shown again.

A fault message facility, if connected, will be switched OFF.
If an acknowledged fault is not remedied, the fault message will be re-displayed the following day and the fault message facility restarted.

Calling up acknowledged faults

Press **OK** for approx. 4 s.
The 10 most recent faults (including resolved ones) are saved and can be called up.

Calling up fault codes from the fault memory (fault history)

The 10 most recent faults (including those remedied) are saved and can be called up.
Faults are sorted by date.

1. Press **OK** and ☰ simultaneously for approx. 4 s.

2. Select "△" and activate fault history with **OK**.

3. Select fault messages with ▲/▼.

Deleting fault history

While the list is displayed, press **OK** until ♙ flashes. Confirm with **OK**.

Fault codes

Displayed fault code	Const.	Weath.-comp.	System characteristics	Cause	Measures
10	X	X	Regulates, as if the outside temperature were 0 °C	Short circuit, outside temperature sensor	Check outside temperature sensor (see page 135)
18	X	X	Regulates, as if the outside temperature were 0 °C	Lead break, outside temperature sensor	Check outside temperature sensor (see page 135)
19	X	X	Regulates, as if the outside temperature were 0 °C	Communication interruption, outside temperature sensor RF: outside temperature sensor RF, KM BUS to wireless base station, wireless base station or wireless repeater faulty or defective	Check wireless connection: place outside temperature sensor RF and wireless repeater close to the boiler. Check KM BUS to wireless base station. Log off outside temperature sensor and wireless repeater, then log them on again. Wireless base station Replace outside temperature sensor RF. Replace wireless repeater. Replace wireless base station.

Service

Fault codes (cont.)

Dis-played fault code	Const.	Weath.-comp.	System char-acteristics	Cause	Measures
20	X	X	Regulates with-out flow tem-perature sen-sor (low loss header)	Short circuit, system flow temperature sensor	Check low loss header sensor (see page 137)
28	X	X	Regulates with-out flow tem-perature sen-sor (low loss header)	Lead break, system flow temperature sensor	Check low loss header sensor (see page 137) If no low loss head-er sensor is con-nected, set code 52:0.
30	X	X	Burner blocked	Short circuit, boiler water temperature sensor	Check boiler water temperature sen-sors (see page 137)
38	X	X	Burner blocked	Lead break, boiler water temperature sensor	Check boiler water temperature sen-sors (see page 137)
40		X	Mixer closes	Short circuit, flow tempera-ture sensor, heating circuit 2 (with mixer)	Check flow temper-ature sensor (see page 142)
44		X	Mixer closes	Short circuit, flow tempera-ture sensor, heating circuit 3 (with mixer)	Check flow temper-ature sensor (see page 142)
48		X	Mixer closes	Lead break, flow tempera-ture sensor, heating circuit 2 (with mixer)	Check flow temper-ature sensor (see page 142)

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Fault codes (cont.)

Dis-played fault code	Const.	Weath.-comp.	System char-acteristics	Cause	Measures
4C		X	Mixer closes	Lead break, flow tempera-ture sensor, heating circuit 3 (with mixer)	Check flow temper-ature sensor (see page 142)
50	X	X	No DHW heat-ing by the boil-er	Short circuit, cylinder tem-perature sen-sor	Check cylinder temperature sen-sor (see page 137)
58	X	X	No DHW heat-ing by the boil-er	Lead break, cylinder tem-perature sen-sor	Check cylinder temperature sen-sor (see page 137)
90	X	X	Control mode	Short circuit, temperature sensor 7	Check sensor 7 on solar control module.
91	X	X	Control mode	Short circuit, temperature sensor 10	Check sensor 10 on solar control module.
92	X	X	No solar DHW heating	Short circuit, collector tem-perature sen-sor	Check temperature sensor 6 on solar control module or sensor on the Vitosolic.
93	X	X	Control mode	Short circuit, cylinder tem-perature sen-sor	Check temperature sensor at terminal S3 to the Vitosolic.
94	X	X	No solar DHW heating	Short circuit, cylinder tem-perature sen-sor	Check temperature sensor 5 on solar control module or sensor on the Vitosolic.
98	X	X	Control mode	Lead break, temperature sensor 7	Check sensor 7 on solar control module.

Service

▶▶

Fault codes (cont.)

Dis-played fault code	Const.	Weath.-comp.	System char-acteristics	Cause	Measures
99	X	X	Control mode	Lead break, temperature sensor [10]	Check sensor [10] on solar control module.
9A	X	X	No solar DHW heating	Lead break, collector tem-perature sen-sor	Check temperature sensor [6] on solar control module or sensor on the Vitosolic.
9b	X	X	Control mode	Lead break, cylinder tem-perature sen-sor	Check temperature sensor at connec-tion S3 on the Vitosolic.
9C	X	X	No solar DHW heating	Lead break, cylinder tem-perature sen-sor	Check temperature sensor [5] on solar control module or sensor on the Vitosolic.
9E	X	X	Control mode	No flow rate in solar circuit or flow rate too low, or temperature limiter has re-sponded	Check solar circuit pump and solar cir-cuit. Acknowledge fault message.
9F	X	X	Control mode	Solar control module or Vitosolic fault	Replace solar con-trol module or Vitosolic
A3		X	Burner blocked	Flue gas tem-perature sen-sor incorrect-ly positioned	Fit flue gas temper-ature sensor cor-rectly (see page 139).

Fault codes (cont.)

Dis- played fault code	Const.	Weath.- comp.	System char- acteristics	Cause	Measures
A4		X	Control mode	Max. system pressure ex- ceeded	Check system pressure max. 3 bar (0.3 MPa) Check the function and sizing of the di- aphragm expan- sion vessel. Vent the heating system.
A7		X	Control mode as per deliv- ered condition	Programming unit faulty	Replacing pro- gramming unit
b0	X	X	Burner blocked	Short circuit, flue gas tem- perature sen- sor	Check flue gas temperature sen- sor
b1	X	X	Control mode as per deliv- ered condition	Communica- tion error, programming unit	Check connections and replace pro- gramming unit if re- quired
b5	X	X	Control mode as per deliv- ered condition	Internal error	Replacing the con- trol unit
b7	X	X	Burner blocked	Coding card fault	Plug in coding card or replace if faulty
b8	X	X	Burner blocked	Lead break, flue gas tem- perature sen- sor	Check flue gas temperature sen- sor
bA		X	Mixer regulates to 20 °C flow temperature.	Communica- tion error, ex- tension kit for heating circuit 2 (with mixer)	Check extension kit connections and code.

Service

Fault codes (cont.)

Dis-played fault code	Const.	Weath.-comp.	System char-acteristics	Cause	Measures
bb		X	Mixer regulates to 20 °C flow temperature.	Communica-tion error, ex-tension kit for heating circuit 3 (with mixer)	Check extension kit connections and code.
bC		X	Control mode without remote control	Communica-tion error, Vitotrol re-mote control, heating circuit 1 (without mixer)	Check connec-tions, cable, coding address "A0" in **"Heating circuit"** group and remote control settings (see page 160). For wireless re-mote controls: Check radio path connections, place wireless remote control and wire-less repeater close to the boiler. Check KM BUS connec-tion to wireless base station. Re-place the wireless components.

Fault codes (cont.)

Dis-played fault code	Const.	Weath.-comp.	System char-acteristics	Cause	Measures
bd		X	Control mode without remote control	Communica-tion error, Vitotrol re-mote control, heating circuit 2 (with mixer)	Check connec-tions, cable, coding address "A0" in **"Heating circuit"** group and remote control settings (see page 160). For wireless re-mote controls: check radio path connections, place wireless remote control and wire-less repeater close to the boiler. Check KM BUS connec-tion to wireless base station. Re-place the wireless components.

Service

Fault codes (cont.)

Dis-played fault code	Const.	Weath.-comp.	System char-acteristics	Cause	Measures
bE		X	Control mode without remote control	Communica-tion error, Vitotrol re-mote control, heating circuit 3 (with mixer)	Check connec-tions, cable, coding address "A0" in **"Heating circuit"** group and remote control settings (see page 160). For wireless re-mote controls: check radio path connections, place wireless remote control and wire-less repeater close to the boiler. Check KM BUS connec-tion to wireless base station. Re-place the wireless components.
bF		X	Control mode	Incorrect LON commu-nication mod-ule	Replace LON com-munication module
C1	X	X	Control mode	Communica-tion error, EA1 exten-sion	Check connec-tions
C2	X	X	Control mode	Communica-tion error, so-lar control module or Vitosolic	Check solar control module or Vitosolic
C3	X	X	Control mode	Communica-tion error, AM1 exten-sion	Check connec-tions

Fault codes (cont.)

Dis-played fault code	Const.	Weath.-comp.	System char-acteristics	Cause	Measures
C4	X	X	Control mode	Communica-tion error, OpenTherm extension	Check OpenTherm extension
Cd	X	X	Control mode	Communica-tion error, Vitocom 100, type GSM	Check connec-tions, Vitocom 100 and coding ad-dress "95" in group **"General"/1**
CF		X	Control mode	Communica-tion error, LON commu-nication mod-ule	Replace LON com-munication module
d6	X	X	Control mode	Input DE1 re-ports a fault at EA1 exten-sion	Remove fault at device concerned
d7	X	X	Control mode	Input DE2 at EA1 exten-sion reports a fault	Remove fault at device concerned
d8	X	X	Control mode	Input DE3 at EA1 exten-sion reports a fault	Remove fault at device concerned
dA		X	Control mode without room influence	Short circuit, room temper-ature sensor, heating circuit 1 (without mixer)	Check room tem-perature sensor, heating circuit 1
db		X	Control mode without room influence	Short circuit, room temper-ature sensor, heating circuit 2 (with mixer)	Check room tem-perature sensor, heating circuit 2

Fault codes (cont.)

Dis-played fault code	Const.	Weath.-comp.	System char-acteristics	Cause	Measures
dC		X	Control mode without room influence	Short circuit, room temper-ature sensor, heating circuit 3 (with mixer)	Check room tem-perature sensor, heating circuit 3
dd		X	Control mode without room influence	Lead break, room temper-ature sensor, heating circuit 1 (without mixer)	Check room tem-perature sensor, heating circuit 1 and remote control settings (see page 160)
dE		X	Control mode without room influence	Lead break, room temper-ature sensor, heating circuit 2 (with mixer)	Check room tem-perature sensor, heating circuit 2 and remote control settings (see page 160)
dF		X	Control mode without room influence	Lead break, room temper-ature sensor, heating circuit 3 (with mixer)	Check room tem-perature sensor, heating circuit 3 and remote control settings (see page 160)
E0		X	Control mode	Fault, exter-nal LON sub-scriber	Check connections and LON subscrib-ers

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Fault codes (cont.)

Dis-played fault code	Const.	Weath.-comp.	System char-acteristics	Cause	Measures
E1	X	X	Burner in a fault state	Ionisation current too high during calibration	Check gap be-tween ionisation electrode and burner gauze as-sembly (see page 46). In open flue opera-tion, prevent high incidence of dust in the combustion air. Press reset button **R**.
E2	X	X	Burner in a fault state	Heating water flow rate too low during calibration. Flow switch has shut down.	Ensure adequate circulation volume. Check flow switch. Remove scaling and blockages. Press reset button **R**.
E3	X	X	Burner in a fault state	Heat transfer too low during calibration. Temperature limiter has shut down.	Ensure adequate heat transfer. Press reset button **R**.
E4	X	X	Burner blocked	Fault, 24 V supply volt-age	Replace control unit.
E5	X	X	Burner blocked	Fault, flame amplifier	Replace control unit.
E6	X	X	Burner blocked	System pres-sure too low	Top up with water.

Service

Fault codes (cont.)

Dis-played fault code	Const.	Weath.-comp.	System characteristics	Cause	Measures
E7	X	X	Burner in a fault state	Ionisation current too low during calibration	Check ionisation electrode: ■ Distance to burner gauze assembly (see page 46) ■ Electrode contamination ■ Connecting lead and plug-in connections Check flue system; remedy flue gas recirculation if required. Press reset button **R**.
E8	X	X	Burner in a fault state	The ionisation current lies outside the permissible range	Check gas supply (gas pressure and gas flow switch), gas train and connecting lead. Check allocation of gas type (see page 36). Check ionisation electrode: ■ Distance to burner gauze assembly (see page 46) ■ Electrode contamination Press reset button **R**.

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Fault codes (cont.)

Dis-played fault code	Const.	Weath.-comp.	System char-acteristics	Cause	Measures
EA	X	X	Burner in a fault state	Ionisation current out-side permissi-ble range dur-ing calibration (excessive deviation from previous level)	Check flue system; remedy flue gas re-circulation if re-quired. In open flue opera-tion, prevent high incidence of dust in the combustion air. Press reset button **R**. Following several unsuccessful reset attempts, replace the coding card and press reset button **R**.
Eb	X	X	Burner in a fault state	Repeated flame loss during cali-bration	Check gap be-tween ionisation electrode and burner gauze as-sembly (see page 46). Check allocation of gas type (see page 36). Check flue system; remedy flue gas re-circulation if re-quired. Press reset button **R**.
EC	X	X	Burner in a fault state	Parameter fault during calibration	Press reset button **R** or Replace coding card and then press reset button **R**.

Service

▶▶

Fault codes (cont.)

Dis-played fault code	Const.	Weath.-comp.	System char-acteristics	Cause	Measures
Ed	X	X	Burner in a fault state	Internal error	Replace control unit.
EE	X	X	Burner in a fault state	No or inade-quate flame signal at burner start.	Check gas supply (gas pressure and gas flow switch), Check gas train. Check ionisation electrode and con-necting cable. Check ignition: ■ Connecting leads to ignition module and igni-tion electrode ■ Ignition elec-trode gap and contamination (see page 46). Check condensate drain. Press reset button **R**.

Fault codes (cont.)

Dis-played fault code	Const.	Weath.-comp.	System char-acteristics	Cause	Measures
EF	X	X	Burner in a fault state	Flame is lost immediately after it has built (during the safety time).	Check gas supply (gas pressure and gas flow switch). Check balanced flue system for flue gas recirculation. Check ionisation electrode (replace if required): ■ Distance to burn-er gauze assem-bly (see page 46) ■ Electrode con-tamination Press reset button **R**.
F0	X	X	Burner blocked	Internal error	Replace control unit.
F1	X	X	Burner in a fault state	Flue gas tem-perature has exceeded limit.	Check heating sys-tem fill level. Vent the system. Press reset button **R** after flue system has cooled down.
F2	X	X	Burner in a fault state	Boiler water temperature sensor has responded.	Check heating sys-tem fill level. Check circulation pump. Vent the system. Check boiler water temperature sen-sor and connecting cables. Press reset button **R**.

Service

▶▶

Fault codes (cont.)

Dis-played fault code	Const.	Weath.-comp.	System characteristics	Cause	Measures
F3	X	X	Burner in a fault state	Flame signal is already present at burner start.	Check ionisation electrode and connecting cable. Press reset button **R**.
F6	X	X	Burner in a fault state	Boiler water temperature sensor temperature values vary too widely from one another.	Replace boiler water temperature sensors
F8	X	X	Burner in a fault state	Fuel valve closes too late.	Check gas train. Check both control paths. Press reset button **R**.
F9	X	X	Burner in a fault state	Fan speed too low during burner start	Check fan, fan connecting cables and power supply; check fan control. Press reset button **R**.
FA	X	X	Burner in a fault state	Fan not in idle state	Check fan, fan connecting cables and fan control. Press reset button **R**.
FC	X	X	Burner in a fault state	Gas train faulty, faulty modulation valve control or flue gas path blocked	Check gas train. Check flue system. Press reset button **R**.

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Fault codes (cont.)

Dis-played fault code	Const.	Weath.-comp.	System char-acteristics	Cause	Measures
Fd	X	X	Burner in a fault state and additional fault b7 is displayed	Coding card missing	Insert coding card. Press reset button **R**. Replace control unit if fault persists.
Fd	X	X	Burner in a fault state	Fault, burner control unit	Check ignition electrodes and connecting cables. Check whether a strong interference (EMC) field exists near the appliance. Press reset button **R**. Replace control unit if fault persists.
FE	X	X	Burner blocked or in a fault state	Coding card or main PCB faulty, or incorrect coding card	Press reset button **R**. If the fault persists, check the coding card and replace coding card or control unit if necessary.
FF	X	X	Burner blocked or in a fault state	Internal fault or reset button **R** blocked	Restart the appliance. Replace the control unit if the appliance will not restart.

Service

Fault codes (cont.)

Faults without fault display

Fault	Cause	Action
Burner blocked and 3 displayed in code 38.	Flow rate insufficient Circulation pump or flow switch faulty Heat exchanger blocked	Check circulation pump and flow switch, replacing them if necessary. Flush and clean heat exchanger.

Maintenance

Checking the outside temperature sensor (weather-compensated control unit)

Service
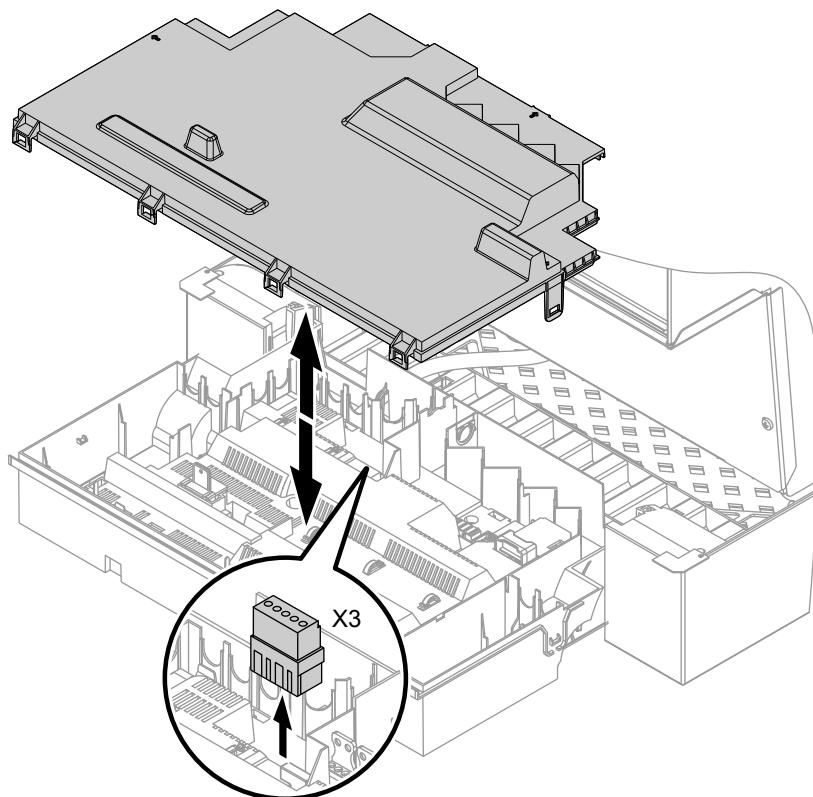
Maintenance (cont.)
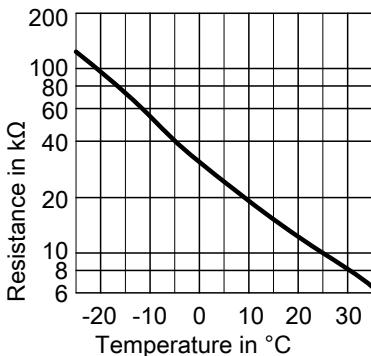
Sensor type: NTC 10 kΩ

1. Pull plug "X3" from the control unit.

2. Test the resistance of the outside temperature sensor across terminals "X3.1" and "X3.2" on the disconnected plug and compare it with the curve.

3. Where actual values deviate severely from the curve values, disconnect the wires at the sensor and repeat test on the sensor itself.

4. Depending on the result, replace the lead or the outside temperature sensor.

Maintenance (cont.)

Checking the boiler water temperature sensors, cylinder temperature sensor or flow temperature sensor for the low loss header
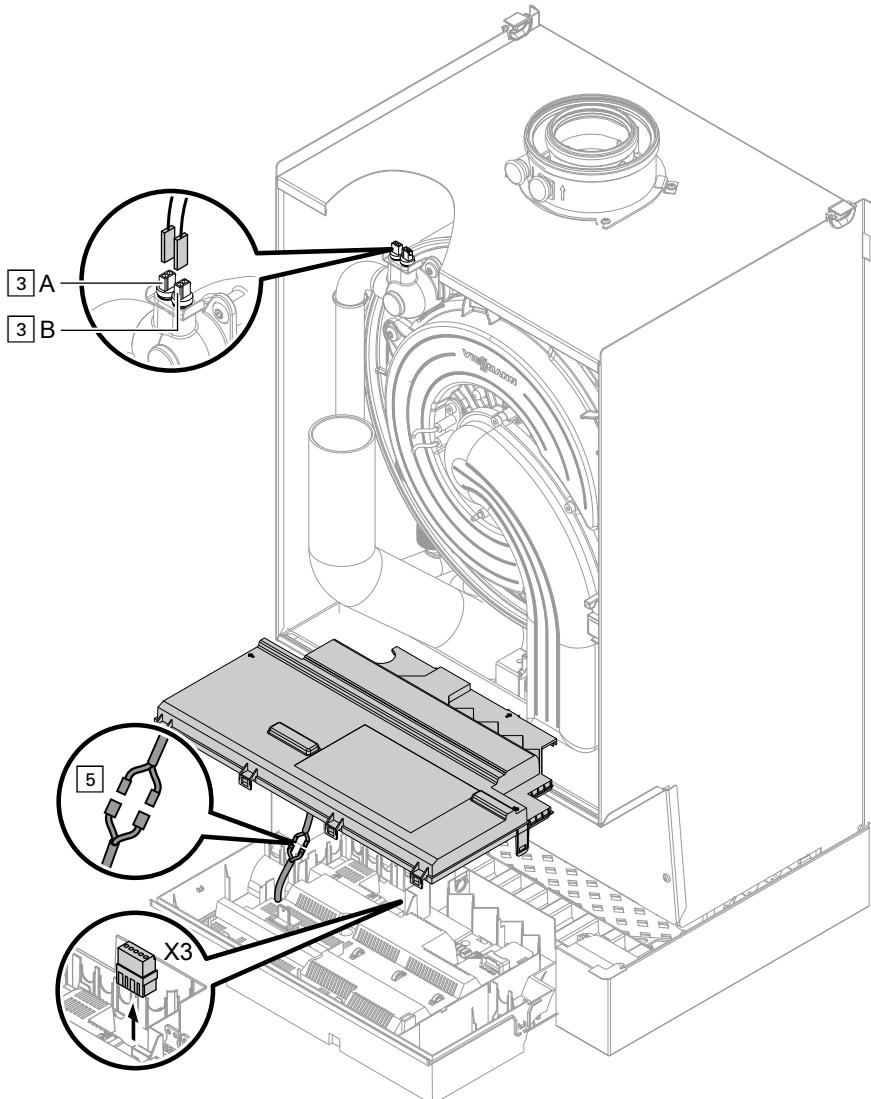
Maintenance (cont.)

1. ■ **Boiler water temperature sensor 1**
   Pull the leads from boiler water temperature sensor $\boxed{3}$A and check the resistance.

   ■ **Boiler water temperature sensor 2**
   Pull the leads from boiler water temperature sensor $\boxed{3}$B and check the resistance.

   ■ **Cylinder temperature sensor**
   Pull plug $\boxed{5}$ from the cable harness at the control unit and check the resistance.

   ■ **Flow temperature sensor**
   Pull plug "X3" from the control unit and check the resistance across terminals "X3.4" and "X3.5".

2. Check the sensor resistance and compare it with the curve.

3. Replace the sensor in the case of severe deviation.

> ⚠ **Danger**
> The boiler water temperature sensor is immersed in the heating water (risk of scalding).
> Drain the boiler before replacing the sensor.
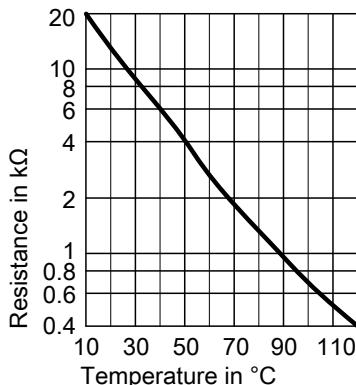
Sensor type: NTC 10 kΩ

Maintenance (cont.)

Checking the flue gas temperature sensor

The flue gas temperature sensor locks out the boiler when the permissible flue gas temperature is exceeded. Reset the interlock after the flue system has cooled down by pressing reset button **R**.
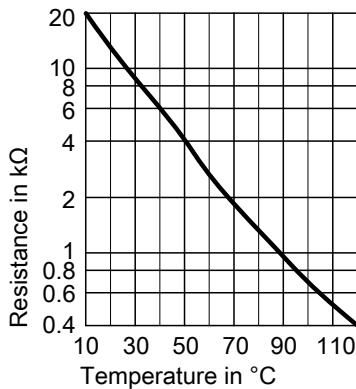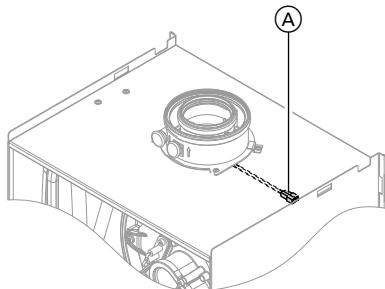
1. Pull leads from flue gas temperature sensor Ⓐ.

2. Check the sensor resistance and compare it with the curve.

3. Replace the sensor in the case of severe deviation.

Sensor type: NTC 10 kΩ

Service

Maintenance (cont.)

Fault during commissioning (fault A3)

During commissioning, the control unit checks correct placement of the flue gas temperature sensor. If commissioning is terminated and fault message A3 is displayed:

1. Check whether the flue gas temperature sensor is correctly inserted. See previous diagram.

2. If necessary, correct the position of the flue gas temperature sensor or replace faulty flue gas temperature sensor.

3. Press reset button **R** and repeat commissioning.
The check is repeated until it is completed successfully.

Checking the fuse
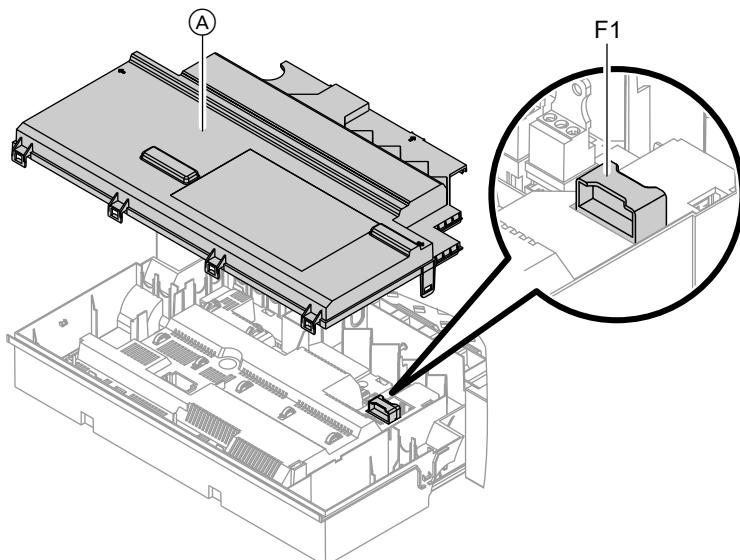
1. Switch off the power.

2. Release the side closures and pivot the control unit down.

3. Remove cover Ⓐ.

4. Check fuse F1 (see connection and wiring diagram).

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Maintenance (cont.)

Extension kit, mixer

Checking the setting of rotary selector S1

The rotary selector on the PCB of the extension kit defines the assignment to the relevant heating circuit.

Heating circuit	Rotary selector S1 setting
Heating circuit with mixer M2 (Heating circuit 2)	2
Heating circuit with mixer M3 (Heating circuit 3)	4

Checking the rotational direction of the mixer motor

After being switched on, the boiler implements a self-test. During this, the mixer is opened and closed again.

Note
The mixer motor can also be started via the actuator test (see chapter "Checking outputs").

Note the rotational direction of the mixer motor during its self-test.
Then set the mixer manually to "Open" again.

Note
The flow temperature sensor must now capture a higher temperature. If the temperature drops, either the motor is turning in the wrong direction or the mixer insert is incorrectly fitted.

Mixer installation instructions

Changing the rotational direction of the mixer motor (if required)
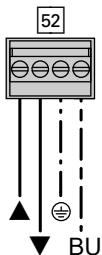
1. Remove the upper casing cover of the extension kit.

   ⚠ **Danger**
   An electric shock can be life-threatening.
   Before opening the boiler, disconnect from the mains voltage, e.g. at the fuse or the mains isolator.

2. At plug 52, swap the cores at terminals "▲" and "▼".

Maintenance (cont.)

3. Refit the casing cover.

Check flow temperature sensor

Pressure drop curve
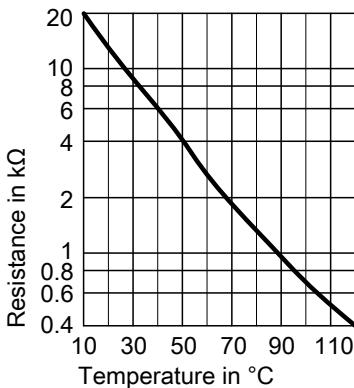
Sensor type: NTC 10 kΩ

1. Disconnect plug 2 (flow tempera-
ture sensor).

2. Check the sensor resistance and
compare it with the curve.
Replace the sensor in the case of
severe deviation.

Check Vitotronic 200-H (accessory)

The Vitotronic 200-H is connected to the
control unit via the LON. To test the con-
nection, carry out a subscriber check at
the boiler control unit (see page 61).

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Constant temperature control unit
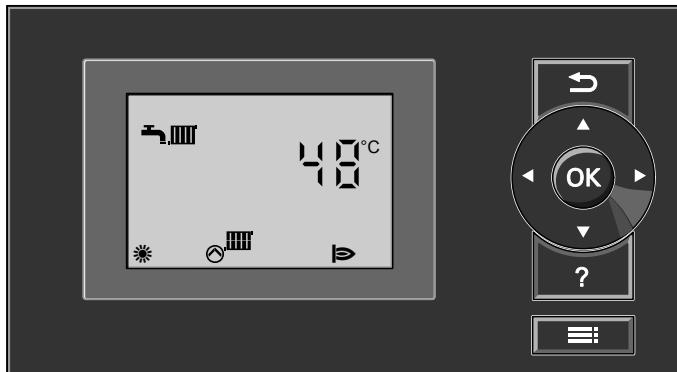
Heating mode

The selected set boiler water temperature will be maintained when a demand is being raised by the room thermostat and the heating program is set to DHW and central heating "▥⬎". The boiler water temperature will be maintained at the default frost protection temperature when there is no demand.

The electronic temperature limiter inside the burner control unit limits the boiler water temperature.
Flow temperature setting range: 20 to 74 °C.

DHW heating

The burner and the circulation pump for cylinder heating are started if the DHW temperature lies 2.5 K below the set DHW temperature.

In the delivered condition, the set boiler water temperature is 20 K higher than the set DHW temperature (adjustable via coding address "60"). The burner will be switched off and the circulation pump run-on time will begin, if the actual DHW temperature exceeds the set DHW temperature by 2.5 K.

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Weather-compensated control unit

Heating mode

The control unit determines a set boiler water temperature subject to outside temperature or room temperature (if a room temperature-dependent remote control is connected) and to the slope/level of the heating curve.
The determined set boiler water temperature is transferred to the burner control unit. From the set and actual boiler water temperatures, the burner control unit calculates the modulation level and regulates the burner accordingly.

The electronic temperature limiter inside the burner control unit limits the boiler water temperature.

DHW heating

The burner and the circulation pump for cylinder heating are started if the DHW temperature lies 2.5 K below the set DHW temperature.

In the delivered condition, the set boiler water temperature is 20 K higher than the set DHW temperature (adjustable via coding address "60"). The burner will be switched off and the circulation pump run-on time will begin, if the actual DHW temperature exceeds the set DHW temperature by 2.5 K.

Weather-compensated control unit (cont.)

Boosting DHW heating

This function is activated by specifying a second set DHW temperature via coding address 58 in group **"DHW"** and activating the fourth DHW phase for DHW heating.

Heating is boosted during the periods selected in this time phase.

Internal extensions (accessories)

Internal extension H1
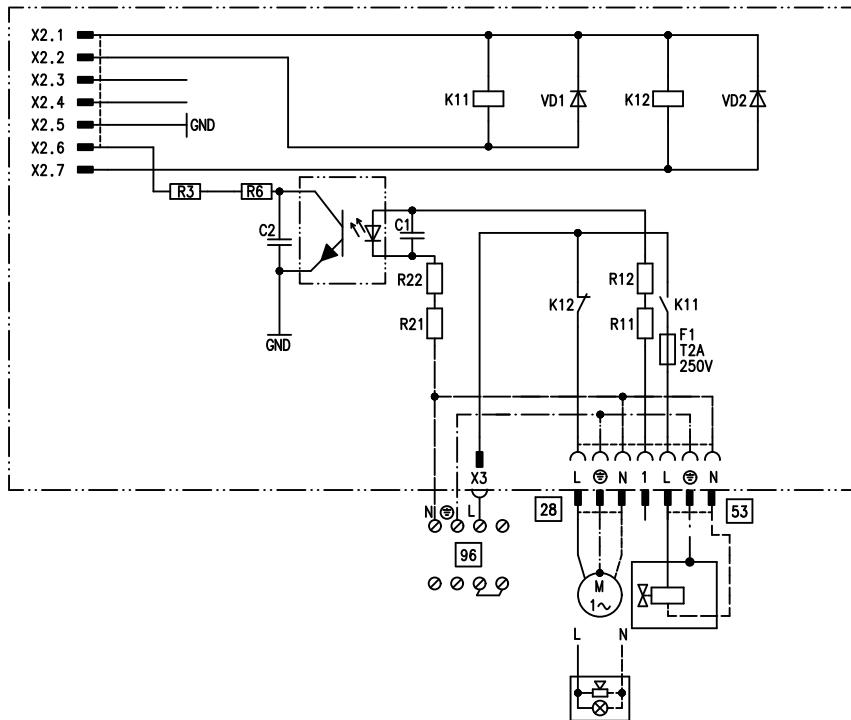
Internal extensions (accessories) (cont.)

The internal extension is integrated into the control unit casing. The following alternative functions can be connected to relay output 28. The function is assigned via coding address "53" in group **"General"**:
■ Central fault message (code "53:0")
■ DHW circulation pump (code "53:1") (only for weather-compensated operation)

■ Heating circuit pump for heating circuit without mixer (code "53:2")
■ Circulation pump for cylinder heating (code "53:3")
An external gas isolation valve can be connected to connection 53.

Internal extension H2
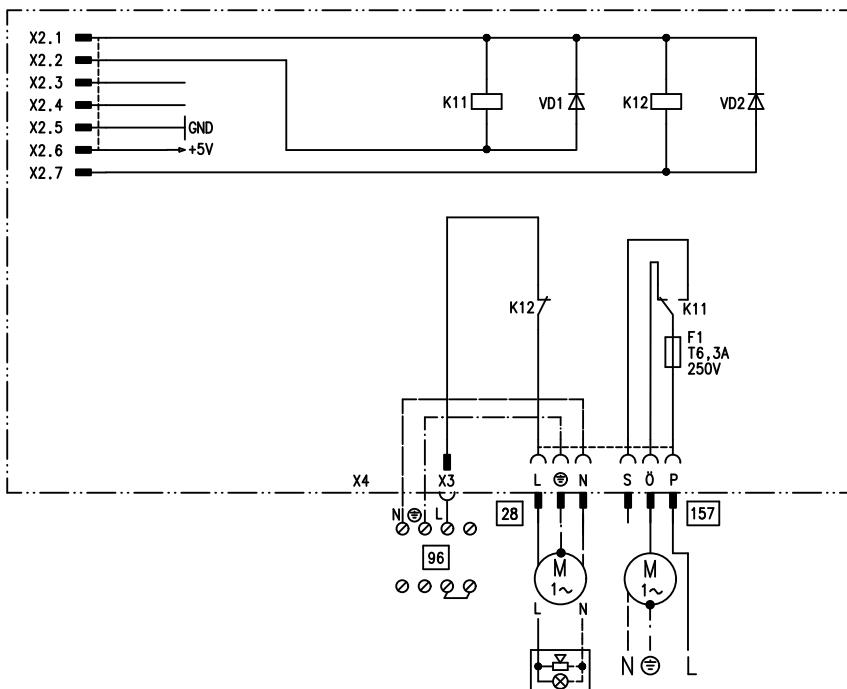
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Internal extensions (accessories) (cont.)

The internal extension is integrated into the control unit casing. The following alternative functions can be connected to relay output 28. The function is assigned via coding address "53" in group **"General"**:

■ Central fault message (code "53:0")
■ DHW circulation pump (code "53:1") (only for weather-compensated operation)

■ Heating circuit pump for heating circuit without mixer (code "53:2")
■ Circulation pump for cylinder heating (code 53:3)

An extractor fan can be switched off via connection 157 when the burner starts.

Service

External extensions (accessories)

Extension AM1
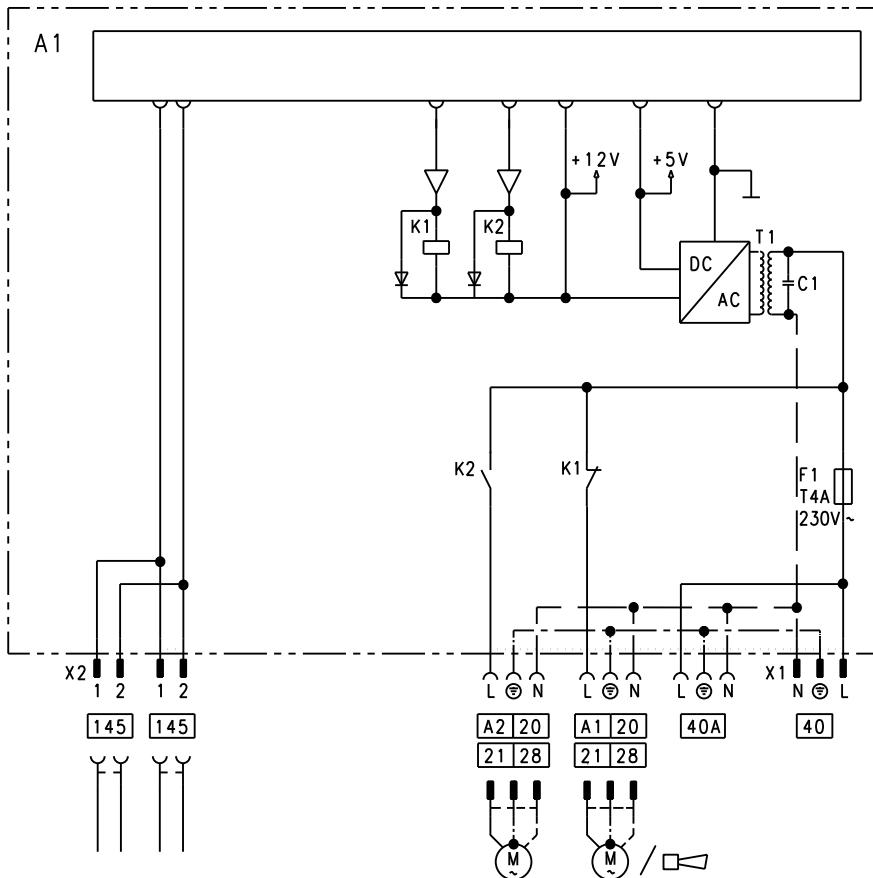
A1	Circulation pump	40 A	Power supply for additional accessories
A2	Circulation pump		
40	Power supply	145	KM BUS

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External extensions (accessories) (cont.)

Functions

One of the following circulation pumps can be connected to each of the connections A1 and A2:
- Heating circuit pump for the heating circuit without mixer
- Circulation pump for cylinder heating
- DHW circulation pump

Select the output functions by means of the codes on the boiler control unit.

Function assignment

Function	Code ("General" group)	
	Output A1	**Output A2**
DHW circulation pump [28]	33:0	34:0 (delivered condition)
Heating circuit pump [20]	33:1 (delivered condition)	34:1
Circulation pump for cylinder heating [21]	33:2	34:2

Service

External extensions (accessories) (cont.)

EA1 extension
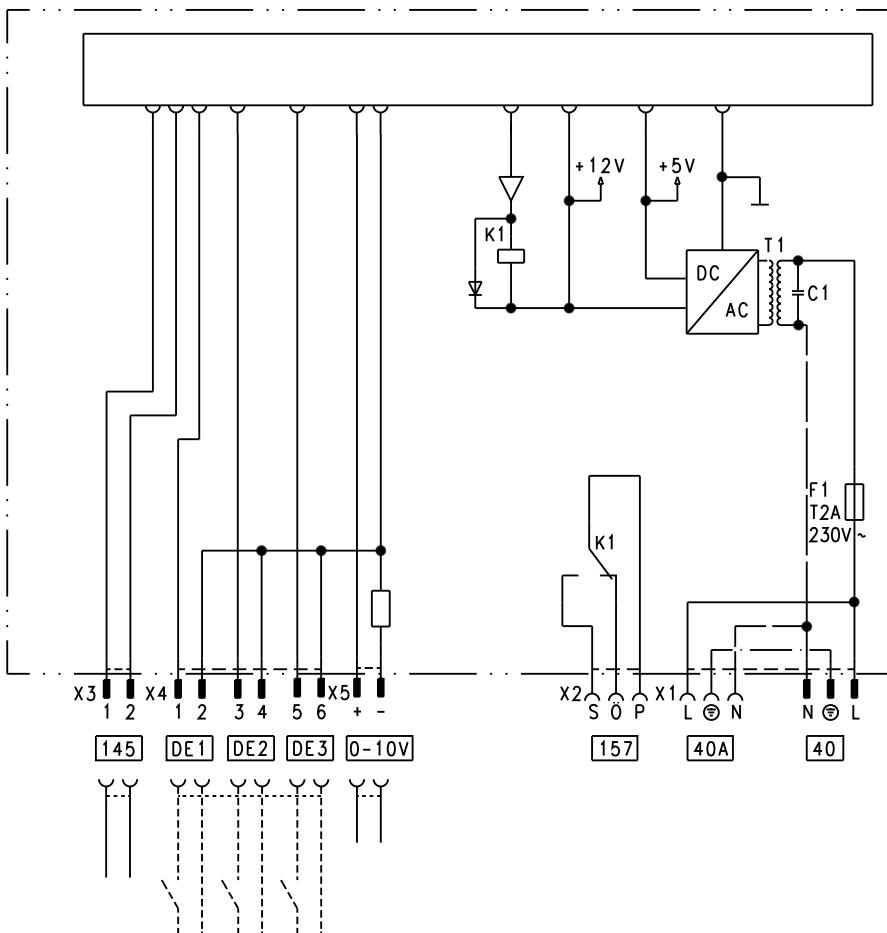
A1	PCB	40 A	Power supply for additional accessories
F1	MCB/fuse		
DE1	Digital input 1	157	Central fault message/feed pump/DHW circulation pump (potential-free)
DE2	Digital input 2		
DE3	Digital input 3		
0 – 10 V	0 – 10 V input	145	KM BUS
40	Power supply		

External extensions (accessories) (cont.)

Digital data inputs DE1 to DE3

The following functions can be connected alternatively:
- External operating program changeover for each heating circuit
- External blocking
- External blocking with fault message input
- External demand with minimum boiler water temperature
- Fault message input
- Brief operation of the DHW circulation pump

External contacts must be floating. When making the connection, adhere to the requirements of safety category II: 8.0 mm air and creep paths and 2.0 mm insulation thickness against 'live' components.

Input function assignment

Select the input functions by means of codes in the **"General"** group at the boiler control unit:
- DE1: Coding address 3A
- DE2: Coding address 3b
- DE3: Coding address 3C

Assigning the operating program changeover function to the heating circuits

Select the operating program changeover function for the respective heating circuit via coding address d8 in the **"Heating circuit"** group at the boiler control unit:
- Changeover via input DE1: Code d8:1
- Changeover via input DE2: Code d8:2
- Changeover via input DE3: Code d8:3

The effect of the operating program changeover is selected via coding address d5 in the **"Heating circuit"** group.
The duration of the changeover is set via coding address F2 in the **"Heating circuit"** group.

Effect of external blocking function on the pumps

The effect on the internal circulation pump is selected in coding address 3E in the **"General"** group.
The effect on the relevant heating circuit pump is selected in coding address d6 in the **"Heating circuit"** group.
The effect on a circulation pump for cylinder heating is selected in coding address 5E in the **"DHW"** group.

Effect of the external demand function on the pumps

The effect on the internal circulation pump is selected in coding address 3F in the **"General"** group.
The effect on the relevant heating circuit pump is selected in coding address d7 in the **"Heating circuit"** group.
The effect on a circulation pump for cylinder heating is selected in coding address 5F in the **"DHW"** group.

DHW circulation pump runtime for brief operation

The DHW circulation pump is started by closing the contact at DE1, DE2 or DE3 by means of a pushbutton. The runtime is adjusted via coding address "3d" in the **"General"** group.

External extensions (accessories) (cont.)

Analogue input 0 – 10 V

The 0 – 10 V hook-up provides an additional set boiler water temperature:

0 – 1 V is taken as "no default for set boiler water temperature".

1 V ≙ Set value 10 °C

10 V ≙ Set value 100 °C

Ensure DC separation between the earth conductor and the negative pole of the on-site voltage source.

Output 157

The following functions can be connected to output 157:
■ Feed pump to substation
  or
■ DHW circulation pump
  or
■ Fault message facility

Information regarding the feed pump
Function only possible in conjunction with a heating circuit control unit connected via LON.

Function assignment

Select the function of output 157 via coding address "36" in the **"General"** group at the boiler control unit.

Control functions

External heating program changeover

The "External heating program changeover" function is connected via extension EA1. There are 3 inputs available at extension EA1 (DE1 to DE3).

The function is selected via the following coding addresses in the **"General"** group:

Heating program - changeover	Code
Input DE1	3A:1
Input DE2	3b:1
Input DE3	3C:1

Select the heating program changeover function for the respective heating circuit via coding address "d8" in the **"Heating circuit"** group at the boiler control unit:

Control functions (cont.)

Heating program - changeover	Code
Changeover via input DE1	d8:1
Changeover via input DE2	d8:2
Changeover via input DE3	d8:3

You can select which direction the heating program changeover takes in coding address "d5" in the **"Heating circuit"** group:

Heating program - changeover	Code
Changeover towards "Permanently reduced" or "Permanent standby" mode (subject to the selected set value)	d5:0
Changeover towards "Constant heating mode"	d5:1

The duration of the heating program changeover is set via coding address "F2" in the **"Heating circuit"** group:

Heating program - changeover	Code
No operating program changeover	F2:0
Duration of the operating program changeover 1 to 12 hours	F2:1 to F2:12

The operating program changeover stays enabled for as long as the contact remains closed, but at least as long as the duration selected in coding address "F2".

External blocking

The "External blocking" and "External blocking and fault message input" functions are connected via extension EA1. There are 3 inputs available at extension EA1 (DE1 to DE3).

The function is selected via the following coding addresses in the **"General"** group:

External blocking	Code
Input DE1	3A:3
Input DE2	3b:3
Input DE3	3C:3

Service

Control functions (cont.)

External blocking and fault message input	Code
Input DE1	3A:4
Input DE2	3b:4
Input DE3	3C:4

The effect on the internal circulation pump is selected in coding address "3E" in the **"General"** group.

The effect on the respective heating circuit pump is selected in coding address "d6" in the **"Heating circuit"** group.

External demand

The "External demand" function is connected via extension EA1. There are 3 inputs available at extension EA1 (DE1 to DE3).

The function is selected via the following coding addresses in the **"General"** group:

External demand	Code
Input DE1	3A:2
Input DE2	3b:2
Input DE3	3C:2

The effect on the internal circulation pump is selected in coding address "3F" in the **"General"** group.
The effect on the respective heating circuit pump is selected in coding address "d7" in the **"Heating circuit"** group.

The minimum set boiler water temperature in case of external demand is selected in coding address "9b" in the **"General"** group.

Venting program

During the venting program, the circulation pump will be alternately switched on and off for 30 s respectively over a period of 20 min.

The burner is switched off during the venting program.
Activate venting program: See "Venting the heating system".

Screed drying

When activating screed drying, observe the information provided by the screed manufacturer.

Control functions (cont.)

When screed drying is activated, the heating circuit pump of the mixer circuit is switched on and the flow temperature is held in accordance with the selected profile. After completion (30 days), the mixer circuit will again be regulated automatically via the set parameters. Observe EN 1264. The report to be provided by the heating contractor must contain the following heat-up details:

■ Heat-up data with respective flow temperatures
■ Max. flow temperature achieved
■ Operating conditions and outside temperature during handover

The various temperature profiles can be set via coding address "F1" in the **"Heating circuit"** group.
The function continues after power failure or after the control unit has been switched off. "Heating and DHW" is started when screed drying is finished or if code "F1:0" is set manually.

Temperature profile 1: (EN 1264-4) code "F1:1"
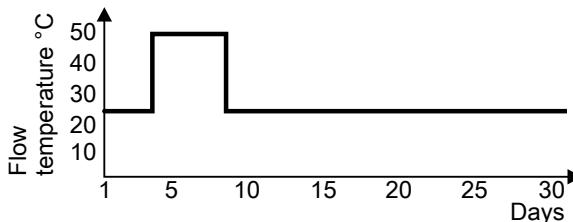
Temperature profile 2: (ZV parquet and flooring technology) code "F1:2"
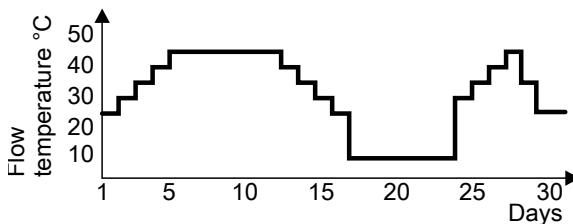
Control functions (cont.)

Temperature profile 3: Code "F1:3"
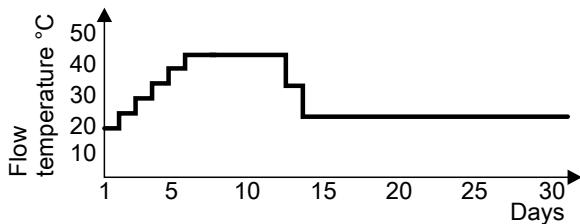
Temperature profile 4: Code "F1:4"
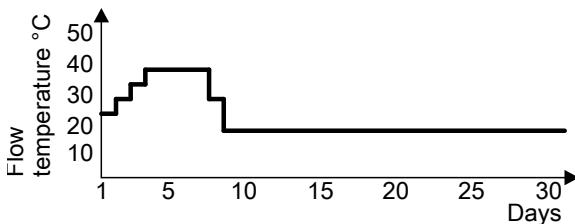
Temperature profile 5: Code "F1:5"
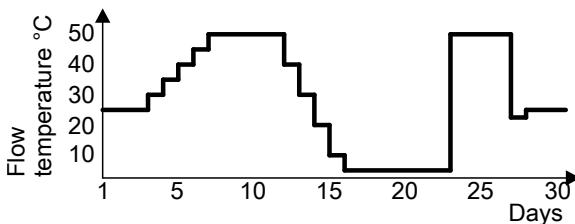
Control functions (cont.)

Temperature profile 6: Code "F1:6"
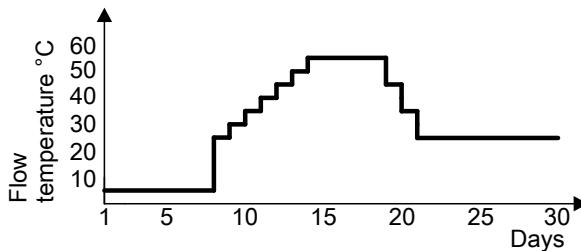
Temperature profile 7: Code "F1:15"
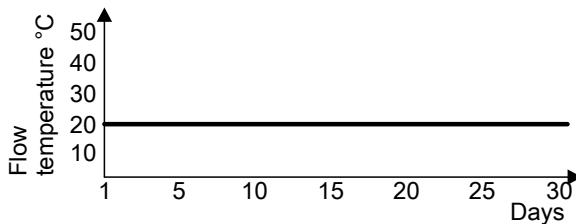
Raising the reduced room temperature

During operation with reduced room temperature, the reduced set room temperature can be automatically raised subject to the outside temperature. The temperature is raised in accordance with the selected heating curve, but no higher than the set standard room temperature.

The outside temperature limits for the start and end of temperature raising can be set in coding addresses "F8" and "F9" in the **"Heating circuit"** group.

Control functions (cont.)

Example using the settings in the delivered condition
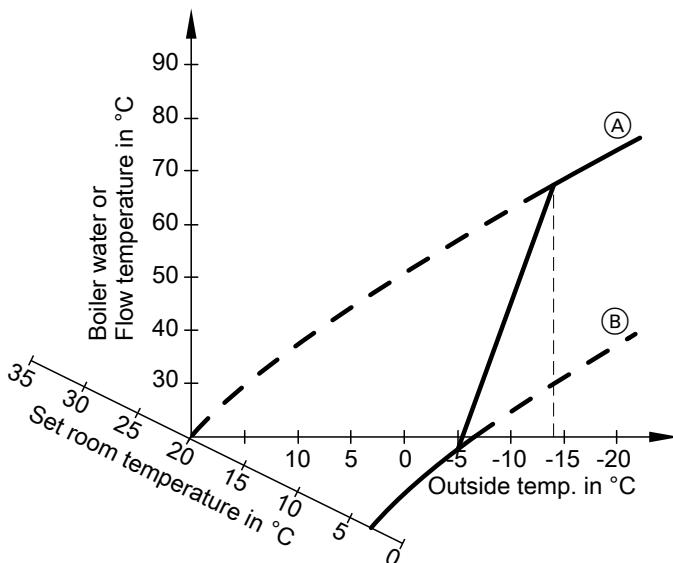
Ⓐ Heating curve for operation with standard room temperature

Ⓑ Heating curve for operation with reduced room temperature

Reducing the heat-up time

During the transition from operation with reduced room temperature to operation with standard room temperature, the boiler water or flow temperature will be raised in accordance with the selected heating curve. The boiler water or flow temperature can be automatically increased.

The value and duration of the additional increase in the set boiler water or flow temperature can be set in coding addresses "FA" and "Fb" in the **"Heating circuit"** group.

Control functions (cont.)

Example using the settings in the delivered condition
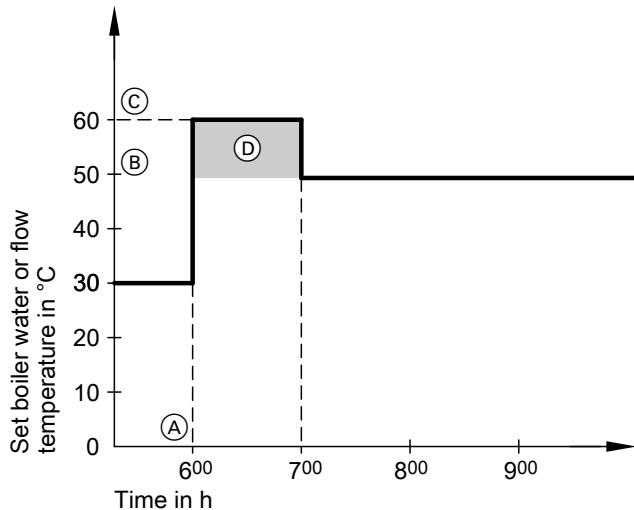
(A) Start of operation with standard room temperature

(B) Set boiler water or flow temperature in accordance with the selected heating curve

(C) Set boiler water or flow temperature in accordance with coding address "FA":
50 °C + 20 % = 60 °C

(D) Duration of operation with raised set boiler water or flow temperature in accordance with coding address "Fb":
60 min

Service

Assigning heating circuits to the remote control

The assignment of heating circuits must be configured during remote control commissioning.

Remote control affects the following heating circuit	Configuration	
	Vitotrol 200A Vitotrol 200 RF	Vitotrol 300A Vitotrol 300 RF
Heating circuit without mixer A1	H 1	Heating circuit 1
Heating circuit with mixer M2	H 2	Heating circuit 2
Heating circuit with mixer M3	H 3	Heating circuit 3

Note
One heating circuit can be assigned to the Vitotrol 200A and 200 RF.
Up to three heating circuits can be assigned to the Vitotrol 300A and 300 RF.
*A maximum of 2 hardwired remote control units **or** 3 wireless remote controls may be connected to the control unit.*
*If the assignment of a heating circuit is later cancelled, reset coding address "A0" in the **"Heating circuit"** group for this heating circuit to 0 (fault message bC, bd, bE).*

Electronic combustion control unit

The electronic combustion controller utilises the physical correlation between the level of the ionisation current and the air ratio λ. The maximum ionisation current is achieved at an air ratio of 1 for all gas qualities.

The ionisation signal is evaluated by the combustion controller and the air ratio is adjusted to a value between λ=1.24 and 1.44. This range provides for an optimum combustion quality. Thereafter, the electronic gas valve regulates the required gas volume subject to the prevailing gas quality.

Electronic combustion control unit (cont.)

To check the combustion quality, the CO_2 content or the O_2 content of the flue gas is measured. The prevailing air ratio is determined with the measured values. The relationship between the CO_2 or O_2 content and air ratio λ is illustrated in the following table.

Air ratio λ– CO_2/O_2 content

Air ratio λ	O_2 content (%)	CO_2 content (%) for natural gas E	CO_2 content (%) for natural gas LL	CO_2 content (%) for LPG P
1.20	3.8	9.6	9.2	11.3
1.24	4.4	9.2	9.1	10.9
1.27	4.9	9.0	8.9	10.6
1.30	5.3	8.7	8.6	10.3
1.34	**5.7**	**8.5**	**8.4**	**10.0**
1.37	6.1	8.3	8.2	9.8
1.40	6.5	8.1	8.0	9.6
1.44	6.9	7.8	7.7	9.3
1.48	7.3	7.6	7.5	9.0

For optimum combustion control, the system regularly carries out an automatic self-calibration; also after a power failure (shutdown). For this, the combustion is briefly regulated to max. ionisation current (corresponding to air ratio λ=1). Automatic calibration is carried out shortly after the burner start and lasts approx. 5 s. During calibration, higher than normal CO emissions may occur briefly.

Service

Connection and wiring diagram – internal connections
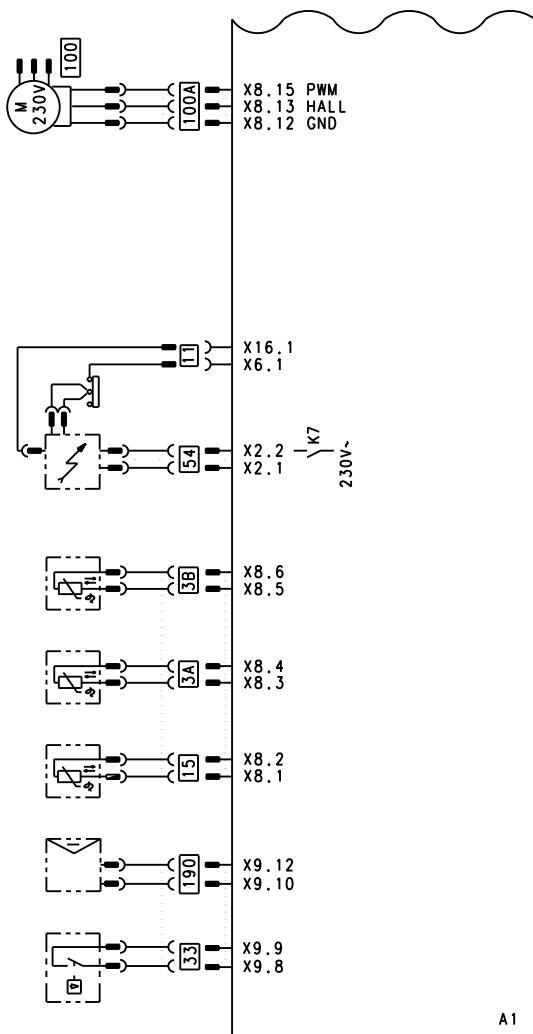
A1   Main PCB
X...   Electrical interfaces
3 A   Boiler water temperature sensor
3 B   Boiler water temperature sensor

11   Ionisation electrode
15   Flue gas temperature sensor
33   Flow switch
54   Ignition unit
100   Fan motor
100 A   Fan motor control

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Connection and wiring diagram – internal… (cont.)

190   Modulation coil

Designs

Connection and wiring diagram – external connections

A1 Main PCB
A2 Power supply unit
A3 Optolink

A4 Burner control unit
A5 Programming unit
A6 Coding card

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Connection and wiring diagram – external… (cont.)

A7 Connection adaptor
A8 LON communication module or cascade communication module
A9 Internal extension (accessories)
S1 ON/OFF switch
S2 Reset button
X... Electrical interfaces
1 Outside temperature sensor
2 Flow temperature sensor, low loss header
5 Cylinder temperature sensor (plug on the cable harness)
20 Heating circuit pump or boiler circuit pump

21 Circulation pump, optionally:
  ■ DHW circulation pump
  ■ External heating circuit pump
  ■ Circulation pump for cylinder heating
35 Gas solenoid valve
40 Power supply
96 Power supply for accessories and Vitotrol 100
100 Fan motor
111 Gas pressure switch
145 KM BUS

Service

Ordering parts

- Serial no. (see type plate Ⓐ)
- Assembly (from this parts list)
- Part number of the individual part within the assembly (from this parts list)

Standard parts are available from your local supplier.

Overview of the assemblies
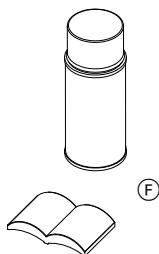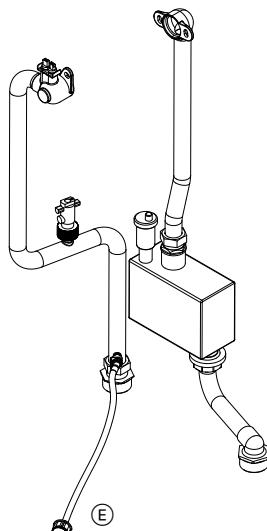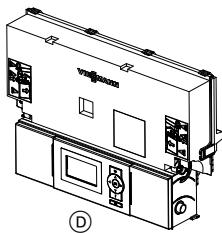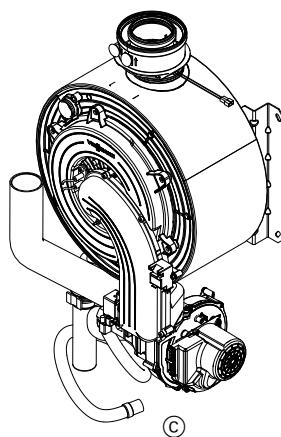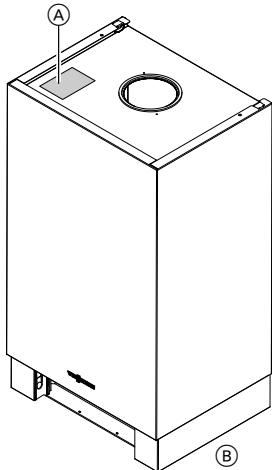
Ⓐ Type plate
Ⓑ Casing assembly

Ⓒ Heat cell assembly
   with burner
Ⓓ Control unit assembly

Service

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Overview of the assemblies (cont.)

(E) Hydraulic assembly   (F) Miscellaneous

Casing assembly

Pos.	Component	Serial no. (see type plate)	
		Part no. of individual part	
0001	Fixing clip (2 pce)	7817500	7817500
0002	Logo	7839162	7839162
0003	Wall mounting bracket	7826547	7826547
0004	Cover panel	7833473	7833473
0005	Front panel	7833654	7833654
0006	Control unit support	7833699	7833699
0007	Contact guard	7833942	7833942
0008	Grommet set	7826539	7826539
0009	Adjustable foot M 8 x 80	7840693	7840693

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Casing assembly (cont.)

0003

0008

0001

0004

0008

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0008

0008

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0009

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0007

0002

0005
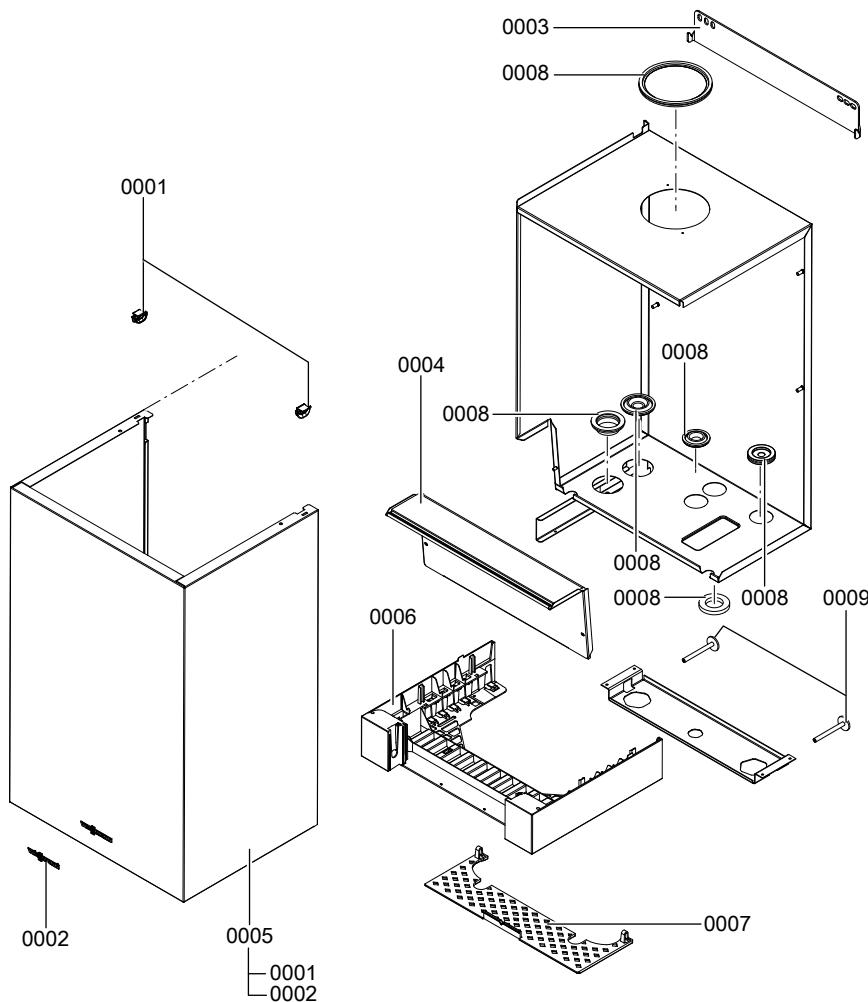
0001
0002

Heat cell assembly

Pos.	Component	Serial no. (see type plate)	
		Part no. of individual part	
0001	Condensate hose	7818021	7818021
0002	Lip seal, system D 80	7818137	7818137
0003	Ventilation air gasket DN 125, condensing	7818138	7818138
0004	Boiler flue connection plug	7822742	7822742
0005	Flue gas temperature sensor	7822767	7822767
0006	Heat exchanger	7826534	7826534
0007	Condensate hose	7826535	7826535
0008	Gas pipe	7826537	7826537
0009	Flue gasket	7826541	7826541
0010	Boiler flue connection 80/125	7827960	7827960
0011	Thermal insulation block	7835597	7835597
0012	Siphon	7828426	7828426
0013	Gasket set A 16 x 24 x 2 (5 pce)	7831673	7831673
0014	O-rings 35.4 x 3.59 (5 pce)	7828007	7828007
0015	Burner 45/60 kW	7124380	7124380

Heat cell assembly (cont.)

0003

0002

0010
— 0002
— 0003
— 0004

0004

0009

0005

0006
— 0009
— 0011
— 0013

0011

0015

0007

0012

0014

0012

0008
— 0013

0012

0001

0013   0013

Service
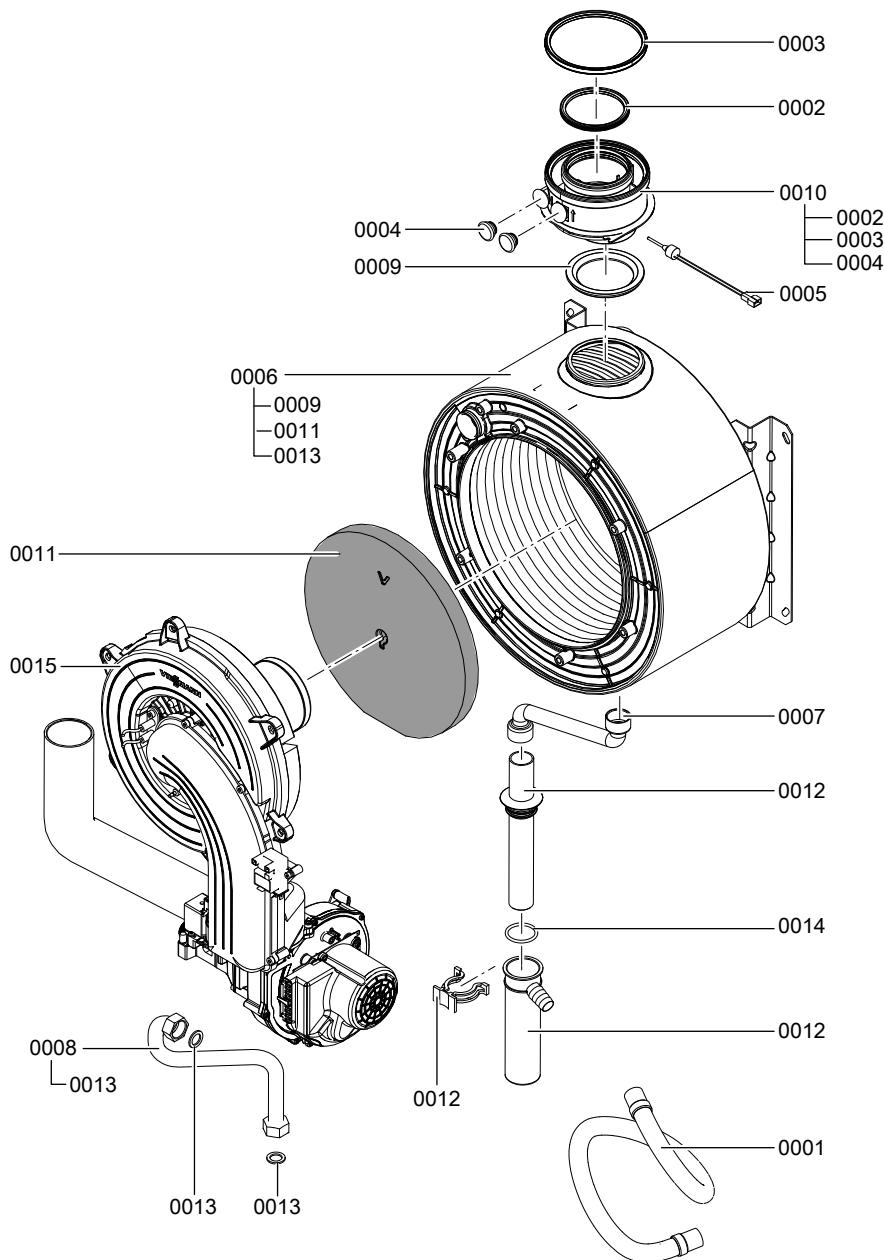
Burner assembly

Pos.	Component	Serial no. (see type plate)	
		Part no. of individual part	
0001	Gas train CES	7826508	7826508
0002	Burner gasket $\varnothing$ 298	7836178	7836178
0003	Burner gauze assembly gasket	7826524	7826524
0004	Burner door	7839178	7839178
0005	Gasket, ignition electrode (5 pce)	7827025	7827025
0006	Gasket, ionisation electrode (5 pce)	7827031	7827031
0007	Ignition unit	7835633	7835633
0008	Venturi extension	7827962	7827962
0009	Thermal insulation ring	7828337	7828337
0010	Flue gas non-return device	7835111	7835111
0011	Ignition electrode block	7829798	7829798
0012	Gas nozzle, 10, white	7833980	7833980
0013	Cylinder burner gauze assembly	7831997	7831997
0014	Radial fan RG148 E 230VAC	7840511	7840511
0015	Ionisation electrode 45-100 kW	7836489	7836489
0016	Mixture restrictor	7836209	7836209

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Burner assembly (cont.)

Service
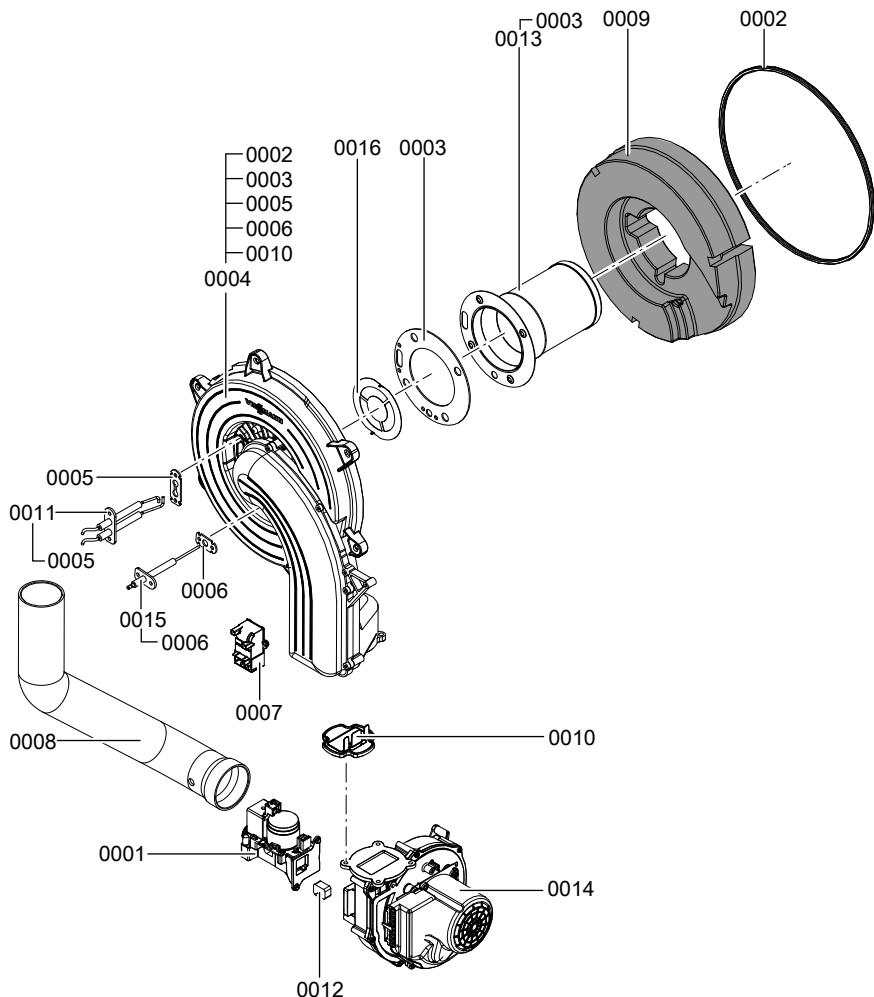
Hydraulic assembly

Pos.	Component	Serial no. (see type plate)	
		Part no. of individual part	
0001	Temperature sensor (2 pce)	7835112	7835112
0002	Quick-action air vent valve G 3/8	7819971	7819971
0004	O-ring gasket set 34.59 x 2.62	7835467	7835467
0005	Flow control switch	7826542	7826542
0006	Connection pipe HR	7826545	7826545
0007	Connection pipe HR	7826546	7826546
0008	Clip $\varnothing$ 8 (5 pce)	7827943	7827943
0009	Air vent container	7831455	7831455
0010	Connecting pipe HV	7835002	7835002
0011	Pressure gauge, 0-6 bar	7833510	7833510
0012	Gasket set 1 1/4 (5 pce)	7835225	7835225

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Hydraulic assembly (cont.)

Service
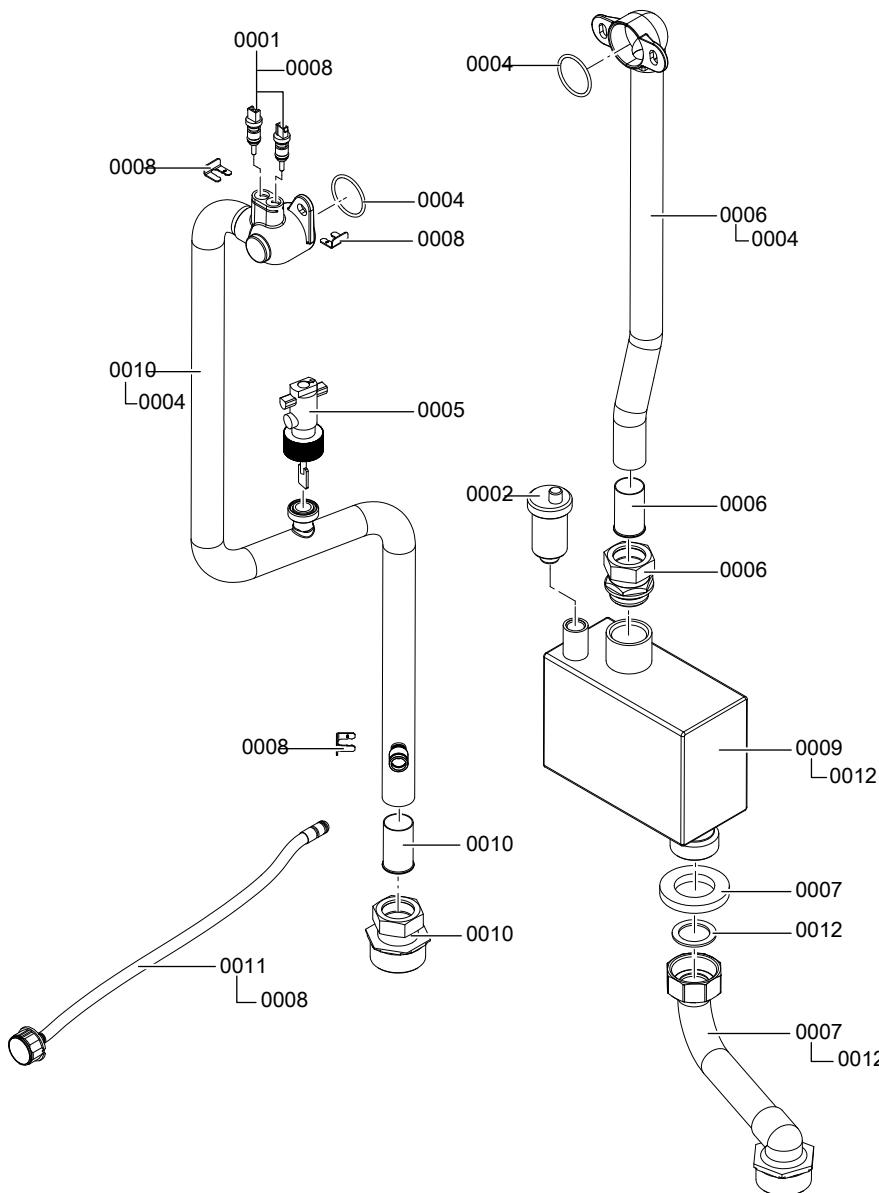
Control unit assembly

Pos.	Component	Serial no. (see type plate)	
		Part no. of individual part	
0001	Control unit VBC135-A10.001	7838553	7838553
0002	Casing back panel	7835808	7835808
0003	Coding card 2567:0201	7838922	
0003	Coding card 2568:0201		7838923
0004	Fuse, 6.3 A (slow), 250 V (10 pce)	7404365	7404365
0005	Fuse holder, 6.3 A (slow)	7823502	7823502
0006	Vitotronic 200 HO1B	7837603	7837603
0007	Vitotronic 100 HC1B programming unit	7459131	7459131
0008	LON HO1 communication module	7179113	7179113
0009	PCB adaptor	7823033	7823033
0010	Cable harness X8/X9/ionisation	7836839	7836839
0011	Cable harness 100/35/54/earth	7836841	7836841
0013	Mating plug	7837898	7837898
0014	Cable ties (10 pce)	7823516	7823516
0015	Locking bolts, left and right	7831618	7831618
0017	Outside temperature sensor RF	7455213	7455213
0018	Outside temperature sensor NTC	7837053	7837053
0020	Internal H1 extension	7498513	7498513

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Control unit assembly (cont.)
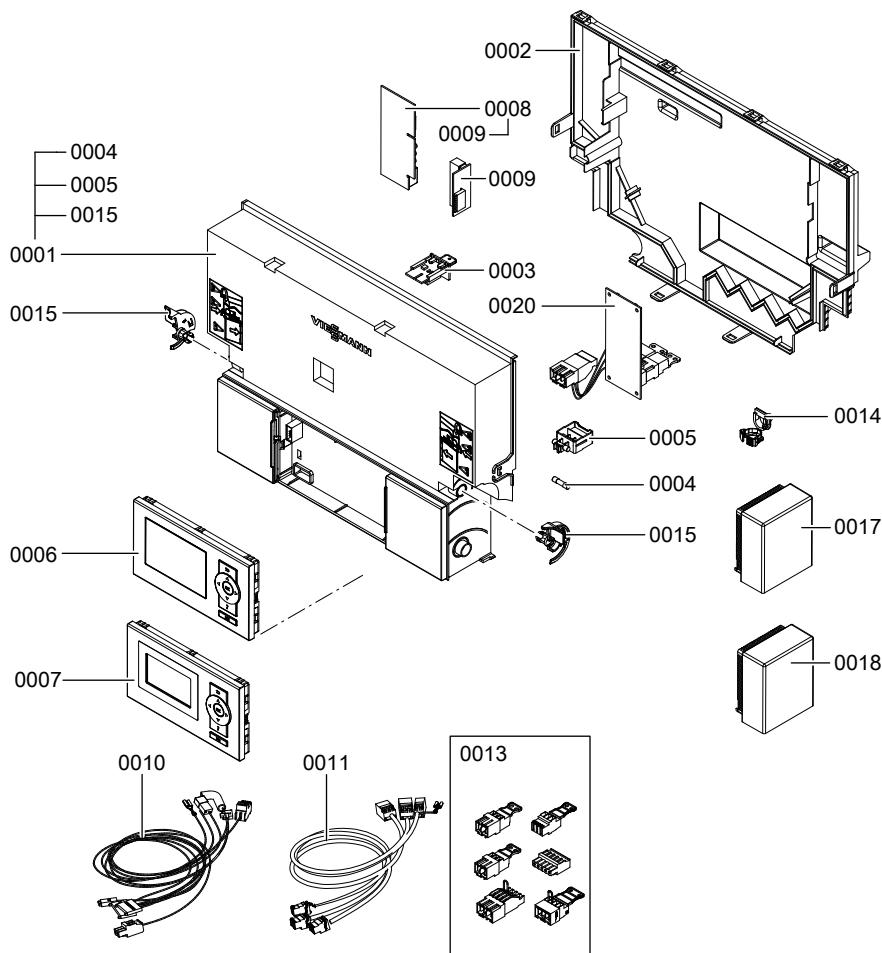
Miscellaneous assembly

Pos.	Component	Serial no. (see type plate)	
		Part no. of individual part	
0001	Touch-up spray paint, white, 150 ml	7822681	7822681
0002	Touch-up paint stick, white	7822682	7822682
0003	Installation and service instructions	5848985	5848985
0004	Vitotronic 100 HC1B operating instructions	5581683	5581683
0005	Vitotronic 200 HO1B operating instructions	5581682	5581682

0001 ─────

0002

0004 ─────

0003

0005 ─────

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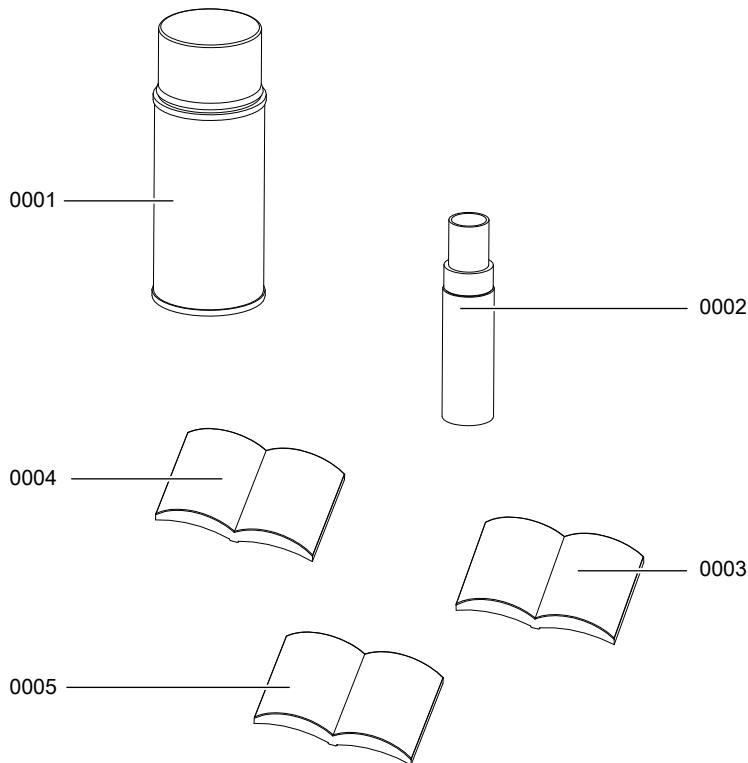
Settings and actual values		Set value	Commis-sioning	Mainte-nance/ Service
	Date Signature			
Static pressure	*mbar* *kPa*	≤ 57.5 ≤ 5.75		
Supply pressure (flow pressure)				
☐ for natural gas E	*mbar* *kPa*	17.4-25 1.74-2.5		
☐ for natural gas LL	*mbar* *kPa*	17.4-25 1.74-2.5		
☐ for LPG	*mbar* *kPa*	42.5-57.5 4.25-5.75		
Tick gas type				
Carbon dioxide content CO_2 For natural gas				
■ At lower heating output	*% by vol.*	7.5-9.5		
■ At upper heating output	*% by vol.*	7.5-9.5		
For LPG				
■ At lower heating output	*% by vol.*	8.8-11.1		
■ At upper heating output	*% by vol.*	8.8-11.1		
Oxygen content O_2				
■ At lower heating output	*% by vol.*	4.0-7.6		
■ At upper heating output	*% by vol.*	4.0-7.6		
Carbon monoxide content CO				
■ At lower heating output	*ppm*	< 1000		
■ At upper heating output	*ppm*	< 1000		

Service

Specification

Rated voltage:	230 V~
Rated frequency:	50 Hz
Rated current:	6.0 A
Safety category:	I
IP rating:	IP X 4 D to EN 60529

Electronic temperature limiter setting:	82 °C (fixed)
Temperature limiter setting:	100 °C (fixed)
Backup fuse (power supply):	max. 16 A

Permissible ambient temperature
■ During operation: 0 to +40 °C
■ During storage
  and transport: -20 to +65 °C

Gas boiler, category II $_{2N3P}$

		12 (17) - 45	12 (17) - 60
Rated heating output range [2] T_F/T_R 50/30 °C	kW		
Rated heat input range	kW	11.2 (16.1) - 42.2	11.2 (16.1) - 56.2
Power consumption in the delivered condition	W	66	122
Connection values relative to max. load with			
Natural gas E	m³/h	4.47	5.95
Natural gas LL	m³/h	5.19	6.91
LPG	kg/h	3.30	4.39
Product ID		CE-0085CN0050	

Note
The supply values are only for reference (e.g. in the gas contract application) or for a supplementary, rough estimate to check the volumetric settings. Due to the factory settings, the gas pressure must not be altered from these values. Reference: 15 °C, 1013 mbar (101.3 kPa).

[2] *Values in () when operating with LPG P*

Declaration of conformity

Declaration of Conformity for the Vitodens 200-W

We, Viessmann Werke GmbH & Co KG, D-35107 Allendorf, confirm as sole responsible body that the product **Vitodens 200-W** complies with the following standards:

EN 297	EN 60 335–1
EN 483	EN 60 335-2-102
EN 677	EN 61 000-3-2
EN 806	EN 61 000-3-3
EN 55 014	EN 62 233

In accordance with the following Directives, this product is designated with **CE-0085**:

92/42/EEC	2006/95/EC
2004/108/EC	2009/142/EC

This product meets the requirements of the Efficiency Directive (92/42/EEC) for **condensing boilers**.

Allendorf, 01 February 2013   Viessmann Werke GmbH&Co KG

Authorised signatory Manfred Sommer

Manufacturer's certificate according to the 1st BImSchV [Germany]

We, Viessmann Werke GmbH & Co KG, D-35107 Allendorf, confirm that the product **Vitodens 200-W** complies with the NO_x limits specified by the 1st BImSchV, paragraph 6 [Germany].

Allendorf, 01 February 2013   Viessmann Werke GmbH&Co KG

Authorised signatory Manfred Sommer

Service

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Keyword index

Keyword index (cont.)

Applicability

Serial No.:
7538256   7538257